STAFF WORKSHOP

BEFORE THE

CALIFORNIA ENERGY RESOURCES CONSERVATION

AND DEVELOPMENT COMMISSION

In the Matter of:	)	
	)	
Preparation of the 2007 Integrated Energy Policy Report (IEPR)	)	
	)	
Staff Workshop on Transportation Energy Demand and Import Infrastructure	)	Docket No. 06-IEP-1E

CALIFORNIA ENERGY COMMISSION

HEARING ROOM A

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STAFF PRESENT

Kae Lewis

Gay Klein

ALSO PRESENT

Jeff Peltola, Los Angeles Department of Water & Power (LADWP)

Karl Knapp, City of Palo Alto Utilities

Meredith Owens, Alameda Power & Telecom

Susan Patterson, Sacramento Municipal Utility District (SMUD)

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Eric Wanless, NRDC

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I N D E X

P R O C E E D I N G S

9:01 a.m.

MS. PFANNENSTIEL: Good morning. This is the some number of IEPR hearings that we've had. This is -- we've had a number of them. This is a workshop on the implementation of Assembly Bill 2021. Thank you all for joining us. I'm Jackie Pfannenstiel, the presiding Commissioner on the IEPR Committee and with me is Commissioner John Geesman, my associate Commissioner on the IEPR Committee. And with that, I will turn it off to get started on the panel. Thank you.

MS. LEWIS: Okay. My name's Kae Lewis. I'm in the Demand Analysis Office and I will be moderating this workshop this morning. What we're going to be talking about is the implementation of AB-2021 that involves setting energy efficiency potential and targets.

I just have a few logistics that I need to tell you about and if you are not familiar with this building, the closest restrooms are right behind the glass wall there. And there's a snack

bar up on the second floor under the white awning. Just go up the stairs and head right.

Lastly, in the event of an emergency and

the building is vacated, you are to go through the double doors here and go out to Roosevelt Park and to stay there until you get the all clear, pretty much following the CEC employees that you went out with.

And I think that is it. Okay. The workshop format today is going to be as so. We're going to go from 9:00 until 1:00 and ending right at 1:00 o'clock. We're going to have two panels and we'll have speakers for each panel which will go one after the other and then we'll have a Q and A session at the end of each panel. So for those of you who were at our last workshop, it'll work pretty much the same.

And our objectives for today is to hear from the publicly-owned utilities about their plans for identifying potential -- setting targets and their process of adopting those targets and also what they have in mind for the subsequent steps implementing programs and ultimately we're going to talk about the evaluation process.

One advantage that we have today is that

we have representatives from big utilities -- the biggest publicly-owned utilities and a couple of the smallest and so we expect to get some

interesting diverse information from them.

Okay. I'm just going to run briefly over the purpose of AB-2021 just to put us all on the same page. This legislation was intended to support other legislation such as SB-1037 and also to support the Energy Action Plan and other recommendations made in previous IEPR reports. The main goal is for load serving entities to procure all cost-effective energy efficiency measures and it would have those following benefits as the key benefits.

The requirements briefly are that -- for the POUs, they are to identify and report to the CEC efficiency potential and they are to set targets for ten years. Then they are to report annually on the funding of their programs, the cost effectiveness of them, their verified savings.

The Energy Commission's responsibilities together with the POUs and the CPUC is to establish a statewide estimate of all IOU, investor-owned utility, and publicly-owned utility

savings potential and set a statewide target for ten years.

Also in our IEPR, the Integrated Energy

Policy Report, we are to provide a comparison of this information, this data that we collect, and lastly, if we see that the targets are perhaps not aggressive enough and have good reason for that, then we are to make recommendations to the POUs, the Legislature, and the Governor.

So that's the shorthand version of where we're headed, what we're trying to achieve.

The next steps: Here's the schedule. Right now the POUs are working on their potential studies. A number of them have been completed and they are working on their draft targets which will be sent to the Energy Commission by June 30th.

They will then go through the process, if they haven't already, of having their governing boards and city councils approve these targets and by the end of September, we should have a set of final adopted targets. And then by next March, in 2008, we will have our first annual report with the information on the programs, expenditures, cost effectiveness, et cetera.

What the PUC is doing right now is they

are providing us the IOU information on potential and targets and they will do this by June 30th. After we collect this data, the Energy Commission

will then draft statewide potential targets and -- potential and targets by August 1 and -- in preparation for the workshop that we will hold on August 9th and then we will go into a round of a final version and have that available for a public session on August 27th. So that's the -- in a nutshell, that's our schedule. A busy summer for all of us.

All right. The next -- I'll just go right into the first panel unless there's any issues or questions at this point.

MR. GEESMAN: I have one and that is how you envision this process coordinating with the proceeding that Commissioner Gruenich has initiated at the CPUC on so-called big, bold energy efficiency programs?

MS. LEWIS: Well, ultimately those are going to have to inform new IOU goals and they're not going to be ready to do that until sometime at the beginning of next year. So --

MR. GEESMAN: What about the assessment of potential?

MS. LEWIS: Well, hopefully we can get some information on assessment -- upgraded assessment on potential, but we're going to get it

too late for this round of the IEPR and probably have to sort of revisit that in the interim IEPR year.

MR. GEESMAN: Yeah. Let me indicate as strongly as I can that sitting here in mid June with a report that we envision publishing by November 1, our inability to adequately assess potential in this cycle I think would be profoundly dissatisfying.

MS. LEWIS: Well --

MR. GEESMAN: Do with that what you will, but it would seem to me with a priority that has been identified since 2003 of number one in the loading order that we and our colleagues at the CPUC and the close coordination that both agencies have tried to bring to the subject ought to be able to provide us with a pretty comprehensive assessment of potential.

MS. LEWIS: Well, they tell us they won't be able to do that until the very end of this year into next year.

MR. GEESMAN: Well, again having spent,

if I read the newspapers correctly, close to a couple of billion dollars of ratepayer money pursuing efficiency potential among investor-owned

customers, if four and a half years into the program we're not able to give a pretty comprehensive assessment of potential, I think that's profoundly dissatisfying.

And I think that this Commission ought to be able to make a pretty good stab at doing so whether the other Commission is able to perform in a timely manner or not.

MR. TUTT: Let me add to that it was my understanding that the potential studies were done. It was the program evaluation studies that were delayed and so there should be information available I would think to do a potential estimate.

The other thing I wanted to mention, I just wanted to make sure that you mention, Kae, that the other part of 2021 involving hot dry air conditioning is going to be handled in a different proceeding or a different part of this whole effort.

MS. LEWIS: Right. Well, we are certainly working closely with the PUC and with

ITRON and they know we're waiting anxiously for information. So if by June 30th they can give us anything that will inform these estimates and help

us update them, they will definitely do that.

MS. PFANNENSTIEL: I think the point, Kae, is that we will -- we need to for our responsibilities under this legislation come up with estimates and goals and we can't wait for the PUC to do their process. We'll have to take whatever information is available in the time frame that you've laid out to be able to do that.

MS. LEWIS: Okay. Well, we'll have to discuss how that might be done. Okay.

Panel 1, we're going to talk about efficient targets and program design and implementation and our panelists are Jeff Peltola from Los Angeles DWP, Karl Knapp from the City of Palo Alto, Susan Patterson who is a board member at SMUD, Bruce Ceniceros also from SMUD, and Meredith Owens from the Alameda Power & Telecom.

And I'm going to ask that while we're going to have all questions at the end, Jeff is on a real tight schedule this morning, so you might think about, if you have specific questions -- we're going to let him go first. If you have

specific questions for Los Angeles, if you could ask them right after he speaks. Okay? Thank you.

MR. PELTOLA: Good morning. My name is

Jeff Peltola. I'm the Director of Budget Rates and Efficiency for the Los Angeles Department of Water and Power. Just a little bit of background.

I've had energy conservation at the department for about 11 months and part of what you'll see through the presentation is we're ramping up the program significantly and we'll talk about obviously the goals and 2021 and what we've done with our potential study and also a lot of what the program implementation is currently and for the next couple of years. We go to our next slide.

This is the mission statement. Just to talk about what the mission is for the department is to implement cost-effective energy efficiency and demand side management programs that provide maximum environmental and financial benefits to our ratepayers and the residents of Los Angeles.

Essentially what this is is we want to try to minimize our advertising and really use rebate pricing as our best way to implement a lot of these programs. It's our predominant marketing

tool. It allows us to use the vendors really to go out and sell our programs. If you go the next slide.

Our overall strategy -- and I've already talked about this a little bit -- is, you know, focus our rebate programs where they're most cost effective given the economics of the power system, which is really fuel costs for us right now. We are at capacity constrained, although last summer we got awfully close, but the -- we are back currently capacity constrained.

We're targeting our rebates at an energy cost saving of about 3 cents kilowatt hour which, you know, for a combined cycle gas plant which is many times our marginal cost. If gas was $4, obviously we're going to be ahead of the game, and I'll show you some of the charts that show how the energy conservation is far more cost effective.

As I said, the next bullet, utilize rebate pricing, that's what we've done. Since the 11 months that I've taken over, we've increased our rebate pricing and we've seen good participation especially in our commercial lighting and our chiller programs.

The advertising is mostly in our program

awareness and we're providing incentive programs for our large customers to mitigate the financial impacts from the loss of the long-term discount

contracts. We had back in the bygone era of deregulation a number of longer-term contracts where we were giving some discounts to these -- some of our larger customers. What we are attempting to do is to use energy efficiency to mitigate those financial impacts to those customers.

If you go to the next page, so far, as you can see from this, our results are promising. You can see through the years going back to 2000-2001, '01-'02 which was during the energy crisis, the department, you know, had the best year that it had up until then which was 164 gigawatt hours.

Just by way of background, our load is 24,000 gigawatt hours. You can see that the program -- we did not have a significant amount of energy savings going forward. This year in '06-'07, we came from basically the lowest year of 16.6 up to 80 which is our second highest year and we have a number of programs that are now in place to get us to that 275 which is more than our

projected low growth and that's what we're going to have for the next four or five years minimum and also, you know, again we'll talk about the

10 percent.

The next page, this is mainly, you know, showing the dollars and obviously to fund those type of energy savings, we're going to have to have significant funding. For the '07-08 fiscal year, we have $75 million in a variety of programs. However, for that, if you look at that top bullet, we have five main programs that account for about 80 percent of our energy savings, these being low income refrigerators. We're going through all of our low income and life-line customers and we're going to replace their refrigerators as long as it's ten years old and has a grounded outlet. We're replacing all of their refrigerators with Energy Star refrigerators.

Small business direct install, we did a pilot program and I think that's copying something you're probably all very familiar with and we're going to implement that en masse to our A1 or small commercial customers.

Direct distribution of CFLs, the intent

is to give two CFLs to every one of our residential customers. The reason for that is so they're aware of the technology and the

improvements that have happened over the last number of years and in conjunction with that, we're going to do manufacturer buy-down for the rebate pricing.

And then again our bread and butter is commercial lighting and chiller programs which are largely responsible for the 80 gigawatt hours that we have for this fiscal year.

Page 6, which is really what the intent of workshop is you can see the yellow line is our potential study that was completed I think about 18 months ago. As you can see, what we're trying to do is accelerate that, and I apologize as I noticed it on the plane on the way up here, but our blue line is actually too low because as we just looked at we have 275 gigawatt hours in '07-'08, so it would be actually above that yellow line even more than what's shown.

Right now this targets out the original potential study was down to 9 percent. We're obviously in the direction of the board of commissioners under Ernie Mayer (ph) is to target

as much energy efficiency as possible. We feel we have programs to do this. By the time those time frames that were just shown, we're going to be at

least 10 percent. We're just trying to find the programs that will bring us up to that.

We will be doing a new potential study as you can see in the '08-09 fiscal year.

The next slide on page 7, obviously we need a funding mechanism for this increased programs, and it comes from two sources and really the first source into the '07-'08 fiscal year will probably not be used because of the level of expenditures, and that's public benefits.

What we are going to use is our energy cost adjustment factor which was unfrozen about a year ago. And through that mechanism, it recovers the program costs. So whatever the rebates on all the -- the costs for putting those rebates and putting the programs in place, it recovers those costs as well as recovering our revenue loss for the margin and I'm going to explain that in just a little bit and show how it's cost effective for the customers and for the department.

If you go to the next page on page 8 and this is our calculation of our projected revenue

or margin loss. What we assume is that when we look at the margin what the -- our average cost of our retail rates and where we have generated that

power in comparison to saving the energy. And what we assume is a 7000 heat rate marginal unit which again is a combined cycle. We have a number of those that are generally our marginal units, most of the time outside of the real peak months.

We assume a natural gas priced at the southern California border and we compare what that revenue margin would be so what the cost is to generate that power and what our average cost is in that margin and what we'll do is we'll collect -- if you look on the next page, this is a comparison of -- our average rate you can see is 9.6 cents up on the top line. In the orange, it costs us 4.9 cents to generate the power at $7 gas. I just use that as an example. This is a slide that's a little bit old because now that price is probably too low -- and at 7000 heat rate. So that margin is 4.7.

If we go to the right-hand side which is the better alternative, you see that, liked I talked about, our energy efficiency programs are at 3 cents. We still collect that 4.7 cents which

keeps the department financially whole, but that 1.9 cents is basically saved, so we have a 20 percent savings for our customers by utilizing

energy efficiency. This is on the -- obviously the customer that goes out and implements that energy efficiency, they're going to get the better part of that savings.

Just the last slide, just to talk about on the rate mechanisms. It sends the proper economic signal to our customer to install energy efficiency and it also sends the proper signal to the department as a utility. The -- it provides a number of operational and environmental benefits obviously because the best renewable is not to produce it.

And as I said, we're a little bit -- if you look back at that one chart, we're going up a pretty steep slope, so 10 percent over ten years, one -- our main challenge right now is to get our programs up and running, but we've set that through this fiscal year. We've set those five major programs and four of them, we've got basically up and running that we'll have for '07-'08 with the fifth one being small business direct install that we're going to get out of the

pilot.

The intent of our board is to really surpass that 10 percent goal, but I want to make

sure that when we present that that we have programs that line up to it.

MR. GEESMAN: I don't want this conversation to reflect on your programs at all because I think that the commitment of your board and the mayor and city council have represented a true turnaround at the department and one that a lot of other utilities in the state, both public and private, would be well advised to try to emulate.

But I want to look at the potential side.

MR. PELTOLA: Okay.

MR. GEESMAN: You make a point of saying that you've got a 20 percent margin between the cost that you attribute to your efficient programs and your cost of generation assuming an efficient new combined cycle at $7 natural gas, and I think we'd both probably acknowledge that not all of your plants fit the criteria of new efficient combined cycle and $7 gas may be more of a wish than current reality.

From an economic perspective, couldn't I just as easily say that your programs are undershooting economic efficiency by 20 percent

using those same assumptions?

MR. PELTOLA: I think that's a valid point and part of what we're looking at right now based on just what we see in gas pricing and whatnot is moving that target up to 4 cents. The program, just because we've had pretty low participation over the last four or five years, we've got some low-hanging fruit that's allowing us to get to that 275.

I've already directed staff to come back and hopefully by the time I get back next week, I will have some new targets at the 4 cents. We're going to have to raise that and certainly as time goes on, you make a valid point, that we'll have to move that target up because as we pick the low-hanging fruit, we're just going to have to spend more of our money. It's still the right thing to do. Even at 4 cents, no question it's the right thing to do from an economic perspective.

MR. GEESMAN: And I don't claim any particular expertise or insight on the program

design side and I know achieving these savings can be a tough thing to do.

MR. PELTOLA: Absolutely.

MR. GEESMAN: But I think that from the State's standpoint and from each of the individual utility's perspectives as well, it would be important to have a handle on what the engineering potential of efficiency is so that we can make a cost effectiveness assessment there irrespective of the program design necessary to achieve those savings.

And let me point to both your rental housing sector and your existing housing stock and the time old difference -- or difficulty that people have had in achieving significant penetrations of efficiency in either one. The State has a lot of different instruments of, shall we say, program implementation from mandates to incentives and at some point in the future, to adequately inform not just this Commission but the Legislature as well as to what potential may be out there, I think that an engineering assessment of that potential would be extremely valuable.

MR. PELTOLA: And I think we have that from -- and I'm just trying to recall back to our

potential study. When you use the term engineering, it was really a technical feasibility that we had in that potential study and that's I

think what you're looking at that max achievable. Obviously the technical is somewhat above that and that's what we're going to have to get to.

It does -- I think these are challenges that will be upon us in three to four years because we have enough programs to get us where we can get those savings now, but in three to four years, we're going to have to do those things.

I will mention one thing. Part of what we've also done in the rental area -- in the rental housing and apartments is we have increased our rebates for the air conditioning and allowed multi-family residential to utilize that which they didn't have before.

MR. GEESMAN: Well, let me pose a couple of examples to you.

MR. PELTOLA: Okay.

MR. GEESMAN: Let's assume for the sake of argument that replacing every incandescent bulb in the City of Los Angeles --

MR. PELTOLA: Uh-huh.

MR. GEESMAN: -- with a compact

fluorescent light --

MR. PELTOLA: Right.

MR. GEESMAN: -- was in fact cost

effective. I would characterize that as an assessment of the engineering potential --

MR. PELTOLA: Okay.

MR. GEESMAN: -- of efficiency improvements. I'd make the same generalization about updating existing buildings in terms of glazing and insulation and air conditioning. It may make no sense whatsoever for a utility to go out and replace every single paned window in the City of Los Angeles, but it would be an assessment of engineering potential that I think that the State and in particular the Legislature might find of value.

And that's the type of assessment that I believe would well inform this Commission, the Public Utilities Commission, and the Legislature in trying to determine what level of urgency we should attach to pursuit of any of these efficiency programs.

MR. PELTOLA: I understand what -- I'll have to go back and review our study and to see to the extent we have that engineering potential in

there. And on the compact fluorescent lamps, I -- obviously that's, from what I see, one of the most cost-effective things and that's why we're doing

the programs that we are with the direct distribution of it.

MR. GEESMAN: Thank you very much.

MS. PFANNENSTIEL: Jeff, I'm really interested in the program. It looks like you're moving very fast on this. You mentioned at the outset that you're moving more towards a rebate program than an advertising.

MR. PELTOLA: Right.

MS. PFANNENSTIEL: And yet when you're talking about the different programs, it seems like it really isn't either one. You're doing a lot of direct impact, replacing refrigerators, giving out light bulbs which are neither rebates nor in fact advertising.

And yet at some point, I get you're giving away the two CFLs to every household.

MR. PELTOLA: Right.

MS. PFANNENSTIEL: I think that's important. That's a form of advertising if you will. It's getting the word out there and making sure that everybody -- you're trying to transform

the market --

MR. PELTOLA: Correct.

MS. PFANNENSTIEL: -- sort of what this

is and as you go forward with your program design, I'll be interested to hear what decisions you make about activities that will actually get new refrigerators or new lighting or better insulation or better windows actually into the places that they're needed rather than in some cases -- and I use this term and people around here hate it when I use it -- rather than bribing people to do what would be in their best interest anyway.

So that kind of trade off and program design strikes me as being something as you're moving up this program implementation very fast, you're going to have to make that decision because even -- well, your $75 million is going to pay all in comparison with I think the magnitude of the effort.

MR. PELTOLA: Right. And I see that now even. It's something we constantly evaluate that at some point we're going to have to spend advertising dollars. Yeah, even, for example, on the low-income refrigerator programs, our -- what we've found is that our mail is getting lost among

the junk mail and our customers don't really believe that, so we're looking at different things such as handing it out at our service centers so

they understand it.

And -- you know, but at some point, we're probably going to have to go to the advertising dollars. Right now, again I think we can do at least for the year or two. That's something we have to constantly evaluate. At some point, we will have to have advertising dollars.

MS. PFANNENSTIEL: Thank you.

MR. TUTT: And, Jeff, I have one question. I want to make sure I understand your chart on page 9 I guess it is --

MR. PELTOLA: Okay.

MR. TUTT: -- the savings chart that you have.

MR. PELTOLA: Correct.

MR. TUTT: What I understand from this is that you have the plant already in place and so that cost is included, but you can displace the fuel, and so that's the trade-off you're getting -- you're coming to.

Now, in the long run, can't you also displace potentially the plant?

MR. PELTOLA: Absolutely. And future plants, I mean we have low -- somewhere in the 1.2 to 1.4 range and, you know, if you look at some of

our overall financial plans that take these into account, you'll see that our load is actually going down for the next five years.

And so you're right. The plant and the capacity should actually go down for the future and that's our intent is to have the energy efficiency because, you know, you hit the nail right on the head. Not only are we doing the right thing from a fuel perspective, but we're also doing that for capacity as well.

MS. PFANNENSTIEL: Well, following up on that, your graphic on that page doesn't really -- I'm sorry -- on page 6 where you show your efficiency projections and your potential --

MR. PELTOLA: Right.

MS. PFANNENSTIEL: -- the quantum, you really don't -- you show it tailing off and I assume that in this conversation, meaning that the actual potential continues.

Is that quantum study something that the Energy Commission has? We've seen that -- being interesting. I know it's -- it must be outdated

by now. It doesn't say when it was done, but if you were doing a new one --

MR. PELTOLA: Right. Yeah. We're going

to do a new one in '08-'09 and I think it was --

MS. PFANNENSTIEL: When was this one done?

MR. PELTOLA: I think it was actually the work was done about two years ago.

MS. PFANNENSTIEL: Okay.

MR. PELTOLA: And I think it was published -- I want to say about 18 months ago. It was because -- I know it was a little bit -- when I took over about 11 months ago.

MS. PFANNENSTIEL: Because we may want to use that as a starting point, so -- thanks.

MR. PELTOLA: Do you have -- yeah -- got a copy of it, yeah.

MS. PFANNENSTIEL: Good. Thank you. Other questions? Maybe we should move on --

MR. PELTOLA: Thank you.

MS. PFANNENSTIEL: Jeff, thank you for coming and I understand you have to leave, but we appreciate your participation.

MR. KNAPP: I'm not used to these mics. Okay. So I'm Karl Knapp. I'm from the City of

Palo Alto, the utilities department. I'm in the resource management division inside the (indiscernible) gas and thanks for having me.

What I want to do today is just to very quickly go over the development of the ten-year energy efficiency portfolio plan -- and it -- our city council is the -- our governing board and they approved our plan in April. We sent it to the CACC shortly thereafter.

And our plan includes both electricity and natural gas because we do both. We also provide water -- waste water, fiber optics, but for the purposes of today, I just want to talk about electrical.

All right. So the core tenets of the long-term plan are really the, you know, efficiency targets which were based on the analysis of the technical and economic potential in the Palo Alto service area, exactly what cost-effectiveness criteria we wanted to apply which those two together then translate into required funding and resource impacts.

So let me talk you through how some of these numbers were developed rather than just read them to you.

So we actually started this process back in 2004 when we began a feasibility study to take a look at -- into local power generation in Palo

Alto and to meet a portion of our load and -- so the first question we asked ourselves, are you doing everything you can with energy efficiency and renewals before you start going to build a power plant. And so that was a good question.

So we linked up with Rocky Mountain Institute who worked with us on -- to develop an integrated -- this integrated marginal cost curve, we'll call it that put all of our in-town resources on one chart to try to take a look at what's the low-hanging fruit, what's the -- and how does power generation compare.

So this chart shows potential for the -- the green squares are energy efficiency measures. The little red triangles were estimates of co-generation potential that some of our larger customers. When the large horizontal lines represent different alternatives for a 25 megawatt share of different kinds of power plant options.

And we found that you can go pretty far before you have to start thinking about building a power plant and you have an energy efficiency

potential somewhere around 70 gigawatt hours below 5 cents a kilowatt hour which is roughly our avoided costs.

So we ended up tabling the whole power generation idea and developed a co-generation incentive program and are trying to expand our energy efficient plan. Next slide.

So our resource mix is a little different from LA. We -- about half of our power plants run large hydroelectric resources. We're currently getting about 15 percent of electricity from wind and landfill gas contracts and the rest we buy on the spot market short and maybe up to three-year long from basically the market.

We have a pretty much very low load growth, about .3 percent, .4 percent per year and it turns out this potential that was identified we think can pretty much offset the load growth that we expect. So we're trying to keep our load pretty much flat through energy efficiency which is the negative resources at the very bottom.

So I've got -- tried to stack them up in the loading resource order. We got efficiency first at the bottom, then renewables, then some conventional resources, and then we're hoping we

can actually fill that red box, the deficient, with either some co-generation, more energy efficient, or cost -- renewables.

This chart also shows how much it can vary from year a year, from a dry year to a wet year and we have to deal with that a lot and it's not just year to year but month to month, and so through the year, we have kind of an issue with trying to match our load. So next slide.

The -- so before the energy efficiency plan was adopted, we had an overall plan we called LEAP, which is long-term electric acquisition plan, and there were two guidelines that were adopted that helped set the policy directive for the specific implementation plan. One was this energy efficiency demand reduction as four main points which are basically to follow the State's loading order, to take a broad community perspective in determining cost effectiveness which is aimed to reduce averaging bills not rates and that was a big hurdle to actually get through with some of our, you know, more economically oriented oversight committees, and also to make sure that the programs for all customer classes so that everybody can be a participant.

Energy efficiency does reduce people's bills, but it does have an impact on rates, so when you're only comparing yourself against others

on rates -- you know, you have to get past that. I think we were successful this time.

But we also have this goal to develop a climate action plan which it's done (indiscernible). It overlaps with efficiency as well as renewables because they're two of the main ways to do something about it, but we've also seen that that's had a big impact on people's interest and actually doing energy efficiency. It's one of the low-hanging fruit for people to do something about it and it actually is -- it's helped marketing a lot. So next slide.

Now, I'm not going to read through this whole thing, but this ia table that we use to try to match the various policy directives we had either from counsel or from State law or the Energy Policy Act or somewhere else to try to map onto that. Well, what strategy or tactic are you going to take in this energy efficiency plan to try to support the various policy directives.

So this is the -- kind of road map we use to determine, well, what should be the

implementation plan and these strategy and tactics form -- or basically form the basis for obtaining your energy efficient portfolio plan. Next slide.

And of course, it is worth recognizing that energy efficiency is not necessarily (indiscernible) endeavor. The issues we've tried to grapple with is -- well, are we sure it's going to work. You know, are we sure it's going to stick around. Are -- what the (indiscernible) and it's going to be better tomorrow and the same problem with why do you ever buy a computer; right? It's -- and is it really going to be cost effective we estimated it's going to be and how do you deal with free riders and how much of a problem is it.

People it's -- going to do it any way. We really want the money to make people to do things they otherwise wouldn't be doing.

But on the benefit side, there's a lot other than just the -- it's not just the energy savings; right? We've got transmission costs and congestion. We don't have any generation assets in our service territory, so all of our -- we actually avoid transmission costs more so than

some of the other service territories.

We try to make sure we give credit for reduction in losses both from the distribution

system and the transmission.

Increased reliability, more predictable load -- other values that are worth taking into account when you're setting up, well, what do you call cost effective. So next slide.

And of course whether energy efficiency investment is cost effective or not depends on whose perspective you're talking about. And so we set our utility budget which it only depends on who much cost is flowing out it and how much we're saying by reducing energy use.

But the customers -- as a group, everyone knows the participant/nonparticipant goes to the whole average bill versus average rate issue and what we -- what the plan embodies in there is to make sure that everybody can fit in a participant box. You have to have programs that can reach everybody so no one has an excuse to not be a participant.

And of course there are different perspectives from total resource cost to societal cost test. We ended up setting our budget based

on a utility cost test, but we actually take a look a societal cost test in determining whether you ought to be doing something or not.

We have -- and that test is consistent with the loading order in that if we think efficiency is actually something that should be before renewables and should be willing to pay more for it and renewables, you should be willing to pay more for it than conventional supply.

So our program is a mix of the different perspectives to try to set how much should be spent.

Okay. So the -- to get a feel for how the energy efficiency savings really manifest themselves, what this chart shows is the estimated energy savings that were in last year's SB-1037 report stacked up over time. Because I'm in supply and I think that buying energy is like buying a strip; right? You're going to buy a ten-year strip or a block, and so we -- some measures only last three years. Some last 5, some 10, some maybe 15. And so you stack these two years on each other and they -- you start getting these kind of curved shape over time.

And so what we try to think about it is

like about a forward strip and when you're saving energy, you're saving a lifecycle -- energy that come back from the investment you're making each

year. So we try to set all our targets based on the area under that big curve each year not just, you know, how do you do this one year. Okay. Next slide.

So I was curious whether the programs we already did were -- cost effective or not and there's two different what I call -- or financial payback curves here. One is take just the direct costs with its incentives and overhead for programs that we have that actually have some kind of incentive identified with it. That's the -- that actually pays back in about five years for energy savings.

And you can throw in everything else we actually spent in that year in '05 and '06. That would be say energy audits, customer consultant assistance, education and outreach. It still pays back in ten years. So that told me that there's a lot more out there to be able to get if what you're already doing is already paid back in probably ten years. So -- next slide.

So based on the work -- RMI we set

targets to try to get up to at least half of what Rocky Mountain Institute identified as our total economic potential which is if we did everything

in Palo Alto that was economic, we estimate about 70 gigawatt hours a year. So it's getting at least a 35. We try to get there in less than five years.

And so each of these bars represents a target for each year of how much we want to get and the amount of money spent. The dark blue line is then what -- how those add up over time, kind of remind people that, oh, you may be only getting 35 -- have this show up in your actual load or your budget in the first couple years, it's going to be -- you're going to be saving money for decades to come.

So that's kind of how it shows to where it shows up in your load forecast. So as we ramp up, we don't really plan to stop after ten years, by the way, either. This is -- if I -- the data -- for a ten-year plan.

So then the next slide kind of shows you that the -- so what we've done is basically doubled our energy efficiency budget from what it was in the last few years to try to reach those

goals is what you -- you take the goal of 35 gigawatt hours a year -- of your costs plus what we consider is a -- closer to 75 bucks a

megawatt hour or 7 and a half cents a kilowatt hour and that tells you what your budget is no matter how you do it.

And then we think that's going to have a long-time rate increase of maybe only half to 1 percent, but every bill ought to go down by 3 percent.

Now, our -- and in the near term, what we're going to do the first couple years -- and we've take another look at how well we're doing is, as long as we're trying to reoptimize the system -- rebates we already have. Most of them were set based on, you know, what are other people doing, you know, what do we have compared to PG&E or Alameda or LA.

And so we work energy environment economics to put together a system where -- because -- energy that's both electricity and gas which (indiscernible) for both, can you have a rebate for something that saves electricity and gas that's cost effective for customers, but if you look at just one or the other, it's not.

So mainly -- our existing systems and take a look at some of the new technologies especially for commercial program. 80 percent of

our load is nonresidential. That's where most of the potential is going to be. That's under that 5 cents lid.

We also -- we don't have any new construction program, so all of our rebates have to do with retrofits and so we're working with the planning development and they're developing a green building program at the same time when we'll have incentives to get people to do that hand in hand.

And finally third-party program. We don't have enough people to just suddenly double efficiency, so we're trying to figure out, well, how can we do this out of the box thinking. And some of these third-party programs that have come around have really worked really well. I know that Silicon Valley Power has one. We have -- we call it Bright Lights where they just go in and it's all turnkey and it's like buying power -- say 35 people -- how you're going to do it and go with the low bid.

And there's a lot of money in the first

year just doing some analysis to get -- you know, get all these tools together to -- you know, databases and to really keep track of it because

I'm used to buying power -- keep track of it the say way I do buying power and be able to not have -- of paper, but a little more automated.

And of course doing independent verification and other legislative mandated services that we need to get in place. So that's the meat of what the efficiency plan is. That's my --

MR. GEESMAN: You indicated an overwhelming majority of your load is commercial. Presumably that's where your load growth is coming from as well?

MR. KNAPP: Well, actually, yeah, the load growth, it's hard to -- it bounces around. Some -- right now our load -- current load dropped in the last few years because of the economic down turn, but the longer term trend is -- it's partially infill development, residential, and, yeah, it's commercial -- you get one data center in Palo Alto and it shows up. So it has been some of the conversion, but kind of IT infrastructure and a little bit of residential. It's kind of a

mix.

MR. GEESMAN: And does the utility have efficiency requirements related to new hook-ups in

the commercial sector, for example?

MR. KNAPP: Well, that would be a building department requirement.

MR. GEESMAN: Okay. Well, does the building department --

MR. KNAPP: Well, actually that's part of the whole green building program just to -- it started with simply a green building checklist and then incentives to try to beat Title 24 by more than 20 -- more than 10 percent. I'm really interested in the big and bold that you mentioned because they're looking at revamping the whole energy code and that ought to make these even easier for us.

MR. GEESMAN: And is it your sense that some of those majors beyond Title 24 would prove cost effective given the criteria that you've developed?

MR. KNAPP: Actually based on RMI's work, it looked there was -- at least half of the potential was in new construction and remodeling of commercial buildings. And that -- it's got a

lot of potential.

MR. GEESMAN: And is the city exploring any mandatory requirements for that at time, for

example, of new hookup or a change of tenancy?

MR. KNAPP: Actually the city -- office is looking at that now because it's nice that other cities have actually tried to do that and find out what kind of -- study has to be done, what do you have to be to mandate it. Or even if it's done statewide though -- it's easier.

MR. GEESMAN: I'll certainly be interested in following your progress. Thanks for being here.

MS. PFANNENSTIEL: Thank you. I was also going to pursue the question of some kind of mandatory efficiency improvement at time of sale. You -- the city can do that in your own jurisdiction whereas it's a tougher thing to do at a statewide level. So it would be interesting to see if that can happen.

MR. GEESMAN: I should say in 1982 we came within one vote on the floor of the State Senate from that being a statutory requirement.

MS. PFANNENSTIEL: Now -- understand we've been trying to do that for about 30 years

and that was as close as we've come. We're still pursuing --

MR. GEESMAN: Well, we stopped trying

for about 25 of those.

MS. PFANNENSTIEL: Well, we're back. So it would be great if the City of Palo Alto could do it on your own.

Then I'm gratified that you're from the resource side of the house, if you will, and you're looking at energy efficiency as a competition with other supply side resources, and, you know, I like the look of the RMI work. That kind of brings you into where this is.

How recently did you work with RMI? When was this -- when did this potential study take place?

MR. KNAPP: Well, they finished in December of '05.

MS. PFANNENSTIEL: Okay. So it's --

MR. KNAPP: Actually a little over a year ago.

MS. PFANNENSTIEL: It's really new. And I didn't hear from you and maybe you said it and I just missed it. Is there a general sort of percentage goal that they feel would be

technically feasible for the city to achieve?

MR. KNAPP: Well, that -- they actually thought we should just go for a hundred 100 of the

economic -- but I wasn't sure that that was feasible. But --

MS. PFANNENSTIEL: Well, what percent perhaps --

MR. KNAPP: So 70 gigawatt hours a year works out to about 70 percent --

MS. PFANNENSTIEL: About 70 percent is --

MR. KNAPP: -- yeah, we're about a thousand gigawatt hours a year.

MS. PFANNENSTIEL: Okay. Great. All right. Thank you.

MR. TUTT: Actually I was going to ask that exact question. Why not go for a hundred percent. Why did you decide on half of the economic potential?

MR. KNAPP: Well, it was based on what people have actually achieved as a percentage of estimated economic potential and specifically between say anywhere from 30 to 70 percent. We figured, well, let's go for at least half. It wasn't no more than half, so --

MS. PFANNENSTIEL: Thanks.

MS. OWENS: Good morning. My name is Meredith Owens. I'm with Alameda Power & Telecom

and I'm a member of the Power Resources Group there and thanks for the opportunity to talk to you folks about our energy efficiency programs.

This morning, I'm going to give you an overview of Alameda Power & Telecom, our energy efficiency targets under AB-2021, program planning, existing and future efficiency programs, our measurement and verification efforts, and finally resource planning. Next.

Let's see. For those of you who -- we're an island in San Francisco Bay. We're connected by some bridges and a tunnel to Oakland and there's ferry service to San Francisco. Let's see. We have quite a bit of marinas. I think we have more marinas than any city in the Bay Area, about 2,000 berths. We have a college and a hospital and also a former Naval Air Station, was closed in 1997.

We are a department of the City of Alameda. We've been providing electric power for 120 years. We're the oldest municipal electric utility west of the Mississippi River. For the

last six years, we've been providing telecom services. That's cable TV, Internet access, and we've been doing some high speed data transfer for

commercial customers as well.

We are governed by our own public utilities board. They're appointed by the mayor and the city manager sits on that board. Our service area is under 13 square miles. We have 120 employees. That's both electric and telecom.

We're a member of the Northern California Power Agency. I'm sure you're familiar with them, a joint power agency of 13 members and through NCPA we build most of our generation and scheduling.

We're very unique from the rest of California in that we have a winter peak. We do not peak in the summer. We peak in the winter at 70 megawatts. Our annual energy use is a little 400,000 megawatt hours a year. We have very little residential air conditioning and many commercial buildings don't have air conditioning as well. We have lots of very, very old buildings there. The residential air conditioning is maybe some window units that run ten days a year if that.

We're very green in our resources. Our low greenhouse gas emissions are about 60 percent less than PG&E's. That's about 39,000 tons of CO2

that's base case year of 2005.

Our rates are 13 and a half percent less than PG&E. I keep comparing because we are surrounded as you'll see by a very large investor-owned utility.

Our voided cost is about 10 cents a kilowatt hour and that includes the 2 cents for environmental -- and transmission and at some times, that cost may go up. Our main concern being an island city in a congested area is transmission.

Let's see. Let me give you -- next is a breakdown of our customer loads and types. We have a total of about 34,000 customers, most of whom are residential and they account for about 35 percent of our load; close to 4,000 commercial and they're about 60 percent; and then a 4 percent distribution system loss. Next.

Next is our power content label. Our customers have told us that they are -- value renewable power resources. So being a customer-owned utility, that's been a big emphasis

of ours. For well over eight years, about 80 percent of our power resources have been generated using renewable power supplies. About 55 percent

of those are eligible renewables.

The bulk of our renewables are from the geysers. We have 17 percent ownership in the two NCPA power plants.

Utility-wide, these are our drivers here. We've got an obligation to serve, keep the lights on. Our reliability rate is quite high. We're proud of the reliability of our distribution system as well.

Another is economic. Back in the '80s, it was actually more cost effective to invest in hydro and geothermal than in power provided by PG&E from fossil fuels. So we've been into renewables since about '83 when the first geysers plant came online.

Let's see. A third consideration is portfolio diversity and we include energy efficiency in there. And that diversity worked very well for us during the California energy crisis.

Transmission considerations, that's a big one for us. That's the wildcard and that's

one that can really push our rates up and provide concerns about reliability. Most of our resources are about 70 miles away and the geysers are

further.

Let's see, future decisions in power resources will be governed by transmission decisions.

And again shared values for our customers. We're owned by our customers, so big investments in renewables in Alameda. Next slide, please.

Energy efficiency program planning: Here's how we see it. It should be viewed system-wide. We have demand side, transmission and distribution systems, and finally the supply side. Our plans for 2008, we're hoping to get a grant from the American Public Power Association -- do an evaluation of our distribution system. There's been great progress and more efficient transformers and perhaps some overall design strategies that we're looking at.

And over the years, we've done quite a few projects on the geothermal power plants. Next slide, I'm going to talk about that there.

As you may or may not know, the geysers

have been running out of steam over time and so we've installed -- we via NCPA and members have installed quite a few efficiency measures.

California Energy Commission has been part of most all of these as well as the Department of Energy. We've put in a fluent pipeline where we took waste water from Lake County, ran it over the hill, and put that back down in the wells to generate more steam.

We've rebladed the turbines to take a lower pressure and most of the fractures in the rocks are vertical and we -- drilling technologies have improved, so we have put in a horizontal injection well which bisects more fractures and we can inject more in there.

And lastly this is new -- is an injection well turbines. As we're injecting back into the turbine, we're going to have met one megawatt -- injecting back into the well, I beg your pardon, we will have injection well turbines.

This has increased the capacity of the geysers to 58 to 68 megawatts at a cost of about $30 million. And these projects have been quite successful particularly that effluent. We're

looking upon expanding that. Let's see.

What we're here for, see AB-2021 efficiency targets. NCPA members are using the

Rocky Mountain Institute energy efficiency tool for California utilities. Based upon preliminary feasible results for Alameda, it's about -- the savings are about 760 megawatt a year or .19 percent of loads at a total cost of $116,000 a year and if we do these feasible, it would accumulate in savings over ten years to be 7,605 megawatt hours.

We've run into some bumps and bruises in this process. There's been some limitations on the cost effective measures generated by the program. We feel this is based upon California system-wide data being applied to the Bay Area micro climate with a heavy emphasis on air conditioning and many of the top measures simply were not feasible.

For example, we've known for a long time the most cost effective -- using the TRC is commercial lighting retrofits and they fit great with our load profile as well and you can count on it and that's very attractive to our resources group.

Nevertheless, that was not at all in the cost-effective measures generated by the RMI tool -- was the top one. The technology is not

that reliable and if you pay for reliability, you pay a very high price.

Also 521 ECMs for -- evaporator fans and we know we don't even have that amount in our service area. So also we value energy audits in our public awareness programs and those are not measures considered in that.

Nevertheless, in developing targets, there are some unique aspects to Alameda Power & Telecom that I'd like to tell the Commission. Our two top customers are the Maritime Administration ships. They must be able to sail anywhere around the world with a two-weeks' notice to provide backup to ships at war, Middle East, wherever, and the Coast Guard cutters. We have a sizeable Coast Guard station. It's a separate island, Coast Guard Island. They're about 8 percent of our load.

Due to security concerns and their operations, there are extremely limited opportunities for energy efficiency there. Also they may sail away someday to another service

area.

Currently the Coast Guard station is going through an extensive retrofit including new

meters as well, new lighting, AC, and so forth. They were about a third of the way there and they're finishing up this year.

Let's see. And some of our loads do in fact come and go. Our second largest customer is the remediation of the Naval Air Station -- former Naval Air Station and they will be gone in six months.

I tell you these things so you can see about the savings targets in relationship to our forecasted loads. Also coming online late 2007 will be a dredging project in the estuary and that's going to be a very high energy user. It will be there for 12 months and they will be gone as well.

Some of our new loads reflect some new Coast Guard cutters coming on. There will be four. The four existing Coast Guard cutters are 1,000 megawatt hours a year and the new ones are 5,000 megawatt hours a year, and again those are loads that we can't change.

We are part of the overall economic

recession. Vacancy rate in business parks is about 30 percent. A significant drop in energy intensity at these business parks. We started out

during the dot-com boom with biotech, computers, big server rooms, and we're down to warehouses, offices.

Let's see. The painful part of all of this is that Alameda staff has been reduced by almost 15 percent because of this and other operations have been reduced as well.

Other considerations: We've got one staff person doing energy efficiency, low income power -- involved with power resource planning and also the extensive new reporting requirements with SB-1037 and AB-2021. They're quite time-consuming for small utilities.

Let's see. The cleanup on the Naval Air Station is very slow and because we're an island, we're nearly built out.

Let me talk about our existing energy efficiency programs. From 1991 to the present, we've reduced our overall demand by 10 percent and annual energy use by 5 percent. Our focus in the past has been on customer satisfaction, provide the better or same programs as the surrounding

investor-owned utilities.

We've focused a lot on publicly-owned buildings, the schools, city facilities,

government facilities. New construction is something we go after pretty aggressively. The two largest projects in Alameda the last year are both going for leads certification and new buildings are coming on -- that we'll be also going for that.

One thing that we're very aware of is having all customers equal opportunity to participate in these programs. They all equally pay in. Next.

Next slide is just a rundown on our existing programs. Some we've reached saturation on modernization. The Energy Star Program, we don't have residential air conditioning, so we can't make huge reductions in the residential sector. Our hope is that this is -- introduce customers to Energy Star appliances and their future appliances will be Energy Star.

Compact fluorescents, again we've got about 28,000 customers and we've purchased, given away, or installed over 35,000 CFLs. And that's -- I'm not include free drivers and

those -- we don't have any big box stores in Alameda.

Key accounts grants, there's a wildcard

for other kinds of projects.

Let's see. Our future programs, our budget for fiscal year '08 -- oh, next. Next slide -- 371,000. The RMI feasibility model, however, suggested only 116,000. The budget comes from the public benefits budget and also from the power resources funds.

Our goals are to maintain existing programs. We'll probably increase rebate levels. An area we are weak on because of staff reductions is marketing efforts. We need to find a way to do that.

Evaluate new technologies, partnerships, monitoring of all public facilities. We are going to do more emphasis on measurement and verification. We haven't done a lot of that in the past. And we hope to reduce our time spent on the reporting requirements also and provide the same programs. Big goal of ours is to be competitive with the investor-owned utilities in California.

I mentioned measurement and

verification. Two goals here: One is to verify our savings and the second is to measure customer satisfaction with programs. If they're not happy

with the program or if we're just not working good, they're not going to participate in more programs. So we're going to continue with our existing databases and we'll field verify all commercial measures.

We're going to do independent evaluation of more complex measures, compressed air systems, variable frequency drives, and we'll use existing databases that we have high confidence in for probably most all the residential measures. Next.

Resource planning is -- let's see. We're fully resources until 2013 and by then we expect we need about 11,000 megawatts on up to 2020, we'll need about 26,000 megawatt hours. Again we've got a high level of renewable, more than 82 percent, and also in our forecast is built-in energy efficiency programs and the Title 24 as we know it. And transmission is a major concern because of these dredgers coming online and the new Coast Guard cutters, our load growth varies year to year from .8 percent to 3.2 percent.

Let's see. Next. That's -- again transmission's a problem. These are some recent power supplies. Half Moon Bay is not online yet.

We're making small incremental steps, one and a half megawatts to up to 10 megawatts of wind. Again our concern about reliability. Next.

The next is a slide showing our renewable power content. You notice the bottom one, the green, is the -- that remaining is eligibles. That's small hydro and geothermal. The bulk of that is geothermal.

Let's see. In '05, '06, we sold the RECs on the wind. So and we plan to continue with our high investments in renewables. We're quite proud of this. Next.

And this is our projection. This is based upon an average water year. A couple things. Morgan Stanley, that is a contract we have for a market for our peak in the winter, Q4, Q1. Landfill gas sites close by, wind. That's our western area hydro. Calaveras is NCPA hydro and a couple of CTs through NCPA, and then the line is our total requirements and energy efficiency again is in this load and -- requirements.

Lastly, for the future, energy efficiency is a key component of resource planning, compliance with the CEC loading order.

We know we have low-hanging fruit in the commercial lighting retrofit area.

Let's see. Leads. The residential sector potential is limited. We've got people getting more and more home electronics despite the big push on Energy Star and compact fluorescents. That's a -- you know, it's kind of awash. We've done -- run some base cases and the savings, not so great.

New generation criteria is renewable. That includes energy efficiency close to the service area and competitively priced. Any questions?

MR. GEESMAN: I thank you for being here. I know that you're a national leader on the renewable side and I regret you're so small that you don't receive the level of national recognition that I think your effort truly deserves.

MS. OWENS: Thank you. Thank you very much.

MS. PFANNENSTIEL: On the efficiency

side, I see that you have in the past saved about 5 percent of your energy through energy efficiency, yet going forward, you think that your

feasible results would be about .2 percent. And that's based on the uncertainty of load and the fact that some of it is Coast Guard and Naval, but there is some new residential construction in Alameda.

MS. OWENS: There is. In the next three years, there will be a fair amount of new units, you know, maybe a couple hundred per year; thereafter leveling off. The problem with residential construction in terms of efficiency savings is there is no air conditioning. You know, we certainly promote Energy Star appliances. We've got programs for that compact fluorescents, but these are the big newer homes. So it's some --

MS. PFANNENSTIEL: Has the city considered any mandate of exceeding the Title 24 standards? Several cities in California have done that.

MS. OWENS: No. At this point, no. We're looking towards more stringent changes in the new Title 24 code coming up. I think is it

'08 or '09?

MS. PFANNENSTIEL: Right. '08.

MS. OWENS: And -- so we're doing that.

We prefer to use the carrot approach instead of the stick. We are in economically not very healthy area and so we're trying to encourage more developers. So we would rather use the carrot as opposed to the stick.

MS. PFANNENSTIEL: Have you considered what we were talking before, Palo Alto, having either a mandatory audit or even some upgrade of energy features of a building at time of sale?

MS. OWENS: No, we haven't, but I think that's an excellent suggestion and we need to look into that. A couple of our property managers are actually quite green. We have an Alameda County green business program and they're certified for that and gung-ho and that would be a really good place to start. They're buying old properties and fixing them up.

MS. PFANNENSTIEL: Thank you. Thank you for being here.

MS. OWENS: Thank you.

MS. PATTERSON: Next?

MS. PFANNENSTIEL: Next.

MS. PATTERSON: Good morning, Commissioners. My name is Susan Patterson, President of the SMUD Board of Directors. And I

just first like to say that as part of SMUD's new peak reduction strategy, I hereby declare Sacramento County a no pantyhose zone for the next four months.

SMUD is the home of public power for more than 60 years and the top rated utility in the nation for customer satisfaction. SMUD is the sixth largest not-for-profit utility in the country and the second largest in Sacramento, and for the record, our rates our 25 to 30 percent lower than PG&E's.

I'd like to thank you for the opportunity to share some brief thoughts on why the board decided to adopt efficiency goals that are 50 percent higher than the State's ten-year, 10 percent mandate outlined in AB-2021.

I'd also like to thank Commissioner Art Rosenfeld for his letter of support to the board encouraging us to consider the higher goals.

Energy efficiency is an important part of SMUD's core values and is reflected in our newly revised vision statement which reads, SMUD's

vision is to empower our customers with solutions and options that increase energy efficiency, protect the environment, reduce global warming,

and lower the cost to serve our region.

In response to AB-2021, last month our staff presented us ten-year scenarios which focused on the technical, economic, and market potential of a 10 percent versus a 15 percent efficiency goal.

Given that board's priorities include reducing peak demand, addressing climate change through locally-based strategies, and improving the way we engage our customers, we felt this more aggressive goal was a positive and crucial step in addressing these priorities.

As we saw it, the board had three options: (1) continue with business as usual, which in our case was an already significant annual goal of .6 percent reduction in energy used by SMUD customers; number (2) adopt the same annual goal of 1 percent reduction as set by the State; or (3) challenges ourselves with a stretch target that would require us to think outside the transformer and reach for even greater annual savings.

This new stretch goal will require SMUD to nearly double its investment in energy efficiency, but it is an investment that we are

willing to make because of the potential savings in energy, in capacity and peak demand, and in greenhouse gas reductions.

Bruce Ceniceros of SMUD will discuss the numbers in detail as part of the next presentation.

Meetings with our customers and stakeholders reveal that they strongly support our existing efficiency and load management programs and would continue to support an expansion of our traditional approaches as well as new and creative methods that have less certainty of their impacts. We'll be looking at innovative program delivery models, education and training, bundling and integration, partnerships with local governments to adopt energy ordinances, strategically targeted R&D, and emerging technologies that will come to market over the next decade.

SMUD is faced with a current peak demand challenge that requires we use 400 extra megawatts for 40 hours each year. To put that in perspective, our new power plant generates

500 megawatts and costs $435 million to build and our load is projected only to increase.

Our new goals are expected to

57 megawatts of electricity and reduce greenhouse gases by 80,000 tons each year. So back to that 500 megawatt gas-fired power plant. The ten-year forecast for energy savings at our adopted 15 percent level is 568 megawatts. I'd be very happy not to build another power plant at the Rancho Seco site.

I'd just like to close with a challenge to the investor-owned utilities and other municipal utilities in California to step up to the plate and sign on to a more aggressive goal. We believe SMUD's ratepayers don't want to settle for the minimum. Could other California ratepayers feel the same? Thank you very much for your time.

MR. CENICEROS: Okay. And I'd like to thank the Commissioners and also Director Patterson especially for coming here in person to give the board's perspective. The board at SMUD has been very supportive of energy efficiency for a long time and particularly lately have been pushing staff to really go as far as we can with

this, especially given the recent directives under AB-2021. The next slide, please.

Director Patterson covered these drivers

pretty well, but I wanted to say a little bit more about that first bullet there. You know, peak demand is a big issue for SMUD, but global climate change has reached a state now that public awareness of the issues and the threats and the concern amongst the public as recent polls has shown is unprecedented and the majority of Americans and probably a lot more Californians are very concerned or concerned about these threats.

And Sacramento is surrounded by and bisected by rivers where the levee's higher than many of our residents and it represents the greatest flood risk in the United States right now. And that's something we thing about a lot. We also get a lot of our energy supply from the snow pack in the Sierra which is very threatened, and I know a lot of other utilities here have similar threats.

Alameda is an island very near sea level, for example, and this is something we have to take very seriously and we thing our customers demand that of us. Next slide.

So that really caused us to think a little bit differently this time around when looking at the efficiency potential and see what

we could do. Just real quick to go through the process that we've followed. Back one, please. Yeah. Thank you.

First, we had a study done of energy efficiency potential about a year ago and we updated that with some recent marginal cost information that our folks in business planning at SMUD had just prepared. We hired a contractor. The Heschong Mahone Group led that team -- to survey the best industry practices for programs and also review our existing programs and help us come up with a new design for our program portfolio.

We sought input from people throughout the various departments of SMUD and also some of our customers to tell us, you know, their ideas of what we should be doing going forward, and then at this stage -- this is real critical point at this point in the process -- we were really offered a challenge by our executive management and then later the board to find ways to be as aggressive possible here.

I mean we're used to taking these potential studies kind of literally. You know, they say the market potential is this. You know,

the technical -- potential may be a lot higher than that, but you really can't expect to do much better than that.

And so we kind of looked at things a different way this time and looked at a lot of things that the potential studies might not have really included.

So the next step we did was start with the goals really. We looked at the State goal of 10 percent. We meshed that with the 1 percent per year scenario and then we looked at how could we maybe go quite a bit higher than that.

And then -- the next slide -- the next step was to build from the bottom up a list of all the things we knew how to do already, the things we were doing currently and maybe weren't fully funding or there was more demand out there for those programs, adding in some additional programs that were in a potential study and some other ones that we thought of or borrowed from other utilities and other parts of the country and tried to see how far that would get us towards the more

aggressive goals.

And then really rather than starting with a potential study, we used it more to confirm

that the various levels of goals were within the realm of possibility as a gut check so to speak and also to suggest some specific things that we could be doing.

And then step 8 was really looking at new things we could do to bridge that gap and I'll get into that in a little bit more shortly here, between what the study told us and what that more aggressive goal might represent. And it did culminate in recommending this very aggressive goal of 15 percent savings over a ten-year period, a little bit more than 1.5 percent per year to get that.

And really the reason we wound up with that goal as the adopted goal was we knew we could get to 1 percent with the known world, but that wouldn't require a lot of change to do that and the 15 percent goal, while there may be a chance we won't achieve it, will really force us to try a lot of new things and kind of reinvent ourselves. Next slide, please.

This is the basic results of a potential

study. You can see the way the numbers vary. To look at the total there in the second to the bottom row, the market current potential of

797 gigawatt hours total. The maximum market potential which assumes we'd be paying full incremental costs of all measures in the study is 1,400 gigawatt hours, and then you can see a percentage of economic potential how much we might expect to get out of each of those subgroups in the left column.

Altogether the market maximum was about 44 percent of economic potential. We knew the IOUs were shooting for 70 percent of market potential and they were succeeding, so we looked at going higher than that market maximum. Next slide.

And as some of the other presenters have mentioned -- some examples. There are some things that are in the study and things that are not traditionally in the study and aren't modeled or can't be modeled, at least the way that they're doing these studies right now.

The things that are in there are basically common conventional energy efficiency measures that assume this classic approach of

paying a rebate for an action, for installing a device, for installing controls, or for doing some sort of retrofit.

It includes emerging technologies, but really only includes the things that are on the radar screen right now today or a year ago when the study was done. And these are things that are really basically available on the market but not widely deployed yet and it doesn't look at all the things that are farther back in the pipeline and there is a lot there in that pipeline.

And lastly, the achievable potential is really based on how we view our success rates doing things the way we've been doing them in the past rather than taking into account some things we could be doing in the future.

The second column there are all the things that we thought were not included in that model and that includes new program delivery models. It includes the impact of education and training and behavioral changes such as you might get if you gave people a meter in their home that showed their instantaneous energy use and how much it was costing them at that time.

We've seen studies that show big savings

from that and that savings is real, although it's short lived unless you continue the support for that kind of effort.

It excludes the effect of bundling programs and integrating various things together to make the whole greater than the sum of the parts. It excludes the market impacts of doing a very high profile public awareness campaign, very strong marketing to consumers, and also doing something like many companies have had success with on the Internet, Amazon.com, eBay. They've found ways to provide a zillion choices to consumers but filter them in a way that you can always find exactly what you're looking for no matter how obscure and it basically provides something for everybody.

You know, we've been leaving out a lot of customers in our programs where they've chosen not to participate for whatever reason and one reason may be that it just doesn't seem to fit their needs for their situation.

And then there are partnerships we could do with community organizations that leverage their resources and their contacts with our customers and get them to take more actions and

that's just part of a deeper customer engagement that our board has been directing the staff to try and achieve. We're putting together a very

comprehensive plan called Compact with a Customer to get them involved and make them invested in the goals we share in common with their electric utility.

So there's a lot there that we feel we can tap that wasn't in the potential study. Next slide, please. Director Patterson covered these goals, but I did want to add to put this in perspective, our current forecast projects 2 percent load growth per year over the next ten years and that will probably be high because all of our forecasts that included a recession in them were high. All the ones that included a boom period were low. We think that the former situation is more likely right now at this point in time.

So it's possible that this more aggressive goal of 1.5 percent per year could actually levelize our load growth if we succeed in achieving it. At least it will reduce our load growth by 75 percent if we can achieve it. And that's a real big deal. Next slide, please.

This graph shows the relationship between the various levels of energy efficiency potential and those three goal scenarios that we

showed on the previous table. The red bar there is currently what we're doing and the blue bar is maximum market potential. You can see that just barely exceeds the 10 percent goal and then we have the green line there of 15 percent. It's quite a bit higher than that, the gap shown there with the bracket and that bracket actually extends down below the top level of that bar for maximum market potential because again that assumes we pay full incremental costs of measures and we don't think we have to do that.

We think there are other ways to get people to do these things. Maybe in some cases, we'll need to do that, but the gap is actually bigger than for using that as a reference point -- have to get to the 15 percent level.

And all told, the 15 percent level is 62 percent of economic potential. We've seen the IOUs doing that. PG&E has been barely making that goal which for a while there people were thinking maybe couldn't be achieved, but they're doing it. Next slide, please.

And this graph shows a little bit more about where that potential is distributed amongst the various sectors. You can see that in the

residential -- existing residential buildings there, there's quite a lot of opportunity there to get to that 60 percent of economic potential. Much less in residential new construction because of the stringent Title 24 standards and we're already getting about 62 percent if we add in these other things here. Business as usual with fully funding our existing programs, that gets us quite a bit up there, and then targeting some new sectors and measures and then throwing in emerging technologies.

Now, these are things that are identified in the potential study to get us there. The white periods here -- the white sections are unknown territory. We don't know right now exactly how we'll get there, but it'll be from that list of things on that table that showed things excluded from the study, those types of things.

So this really tells us that rather than try and go -- get to 62 percent from each of these sectors of market potential, we're more likely

going to overshoot on the commercial, industrial, maybe a little bit more on the new construction, residential, and commercial. It's going to be

harder in existing residential.

So this helps direct our efforts in terms of designing our portfolio programs. Next, please.

And this graph here kind of gives us the same kind of information broken down a little bit more by the major end uses here. You can see there's a difference between the numbers in black which is what the full economic potential is and how much of that economic potential comes from that sector versus the numbers in parentheses in blue which are a percent of the economic potential that would be captured by 2017 if we just continue what we're doing.

So where those numbers differ the most is where the most potential lies and you can see there's a big gap there in residential HVAC, lighting -- residential lighting and particularly in the emerging technologies for both residential and commercial. There's a lot we could be doing with those and we know that. We know that we need to -- you know, as Commissioner Rosenfeld likes to

say, you know, bridge that chasm of death between R&D and getting those technologies successfully into the market. Next, please.

And here are some examples of new programs and activities that are being considered right now at SMUD. It's a long list. I'm not going to through all of these, but they're in the slides if you want to refer to those and we've already alluded to a few. But probably the most significant are going to be things like the home performance with Energy Star program, that first bullet, and that is capable of getting 30 to 50 percent energy savings in existing homes, particularly older homes, but I got 56 percent in my home which is only nine years old -- the standards in place in 1998. So there's a lot of potential there.

We also are going to do some more in multi-family. We've kind of been skirting that market. It's a hard one to address and we are hoping to evolve our residential new construction program to achieve 75 percent savings above Title 24 including the PV output, but more importantly although zero out the peak demand which is a real concern for us in the Central

Valley.

And then that last bullet there, we're already starting a big effort as part of the

compact with the customer initiative to partner with local community organizations and neighborhood associations to work with them and have them be our army in the field to get the word out on the programs.

And I'll just mention one other thing too. On the left here, the support of local and state codes and standards. We have an appointee, Louis Wright, who is working with every single city in the County of Sacramento in our service territory to get them to do things like remove permit fees for solar and streamline the permitting process, to consider adopting local energy ordinances so that new construction goes beyond Title 24, and various other efforts that will support our efficiency programs here.

We think there is huge potential here. It was mentioned by both Commissioners earlier, to require some things to be done and we will hold their hand -- our customers' hands and get them the rest of the way, but Title 24, you know, it's wonderful and it's most aggressive set of State

standards in the country and maybe the world even, but there's more that can be done on a local basis for those local governments who also feel as we do

that things like climate change are a serious challenge and we need to do everything we can and bring up that bottom to a higher level. Next, please.

I'll talk a little bit about how we estimated the budgets here. Starting with the observation that normally one would say that the next increment of savings is going to always come at a higher cost. You've done the easy things. To get the next bit of savings is going to cost more.

Well, we know that we can't spend that much more to do this. We're already spending a lot on our budgets and there are all these pressures to keep from raising rates to cover these programs.

So we are going to endeavor to do the opposite and we have a lot -- several different strategies that we're going to employ here that will hopefully do that for us such as minimizing an increase in labor by using third-party program administration and doing more bundling of programs

together in our delivery stream and also streamlining all of our processes such as processing rebate applications, for example, to

economize on our labor.

We want to again leverage resources in the community and we want to use the Internet as a tool to allow customers to customize for themselves many of our program offerings so it best fits their needs. And you can see the cost margin for the Internet commerce that's out there right now is so much better than the traditional way of delivering things the brick and mortar way. We want to try and take advantage of it as well.

So we're starting by lifting the budget caps in the programs that are constrained only by the budget and we are going to add in a cost estimates or have added in the cost estimates for our new program strategies that we've identified and then try and estimate what it will cost to close that gap between that known world and the rest.

We have a ramp-up period here of two years. We're not going to jump immediately to the 1.5 percent and the $45 million budget. We're going to go up in thirds to that over two years.

And so it buys us a little bit of time to figure out those additional things.

But again since this is counter to the

conventional thinking of costs of acquiring efficiency, only experience will really show whether these budget projections will get us to our goals and we may have to make some adjustments down the road.

I don't think I said this before, but really the choice came down to do we adopt a goal that we know we can meet, the 1 percent goal, with the known methods or do we propose a budget and a goal that is going to be a stretch target. And we knew that if we tripled or quadrupled the budget amount with only 2.5 increase in savings that we could never get that by the purse string holders in business planning and other parts of SMUD who are concerned about customer value and keeping rates low.

So we had to -- you know, it forced us to look at doing things more efficiently and that's a good thing because we know there are many opportunities to reduce costs.

So the last gut check here is, is this really possible. Look back in history and, you

know, what does our experience tell us. And the fact is we have done this before. You can see the green line there is the total budget dollars that

we've spent on an annual basis and back when Rancho Seco Nuclear Power Plant was voted to be closed by our customers around late '80s, we decided that we were going to build a conservation power plant and you can see how dramatically our budget and resources were shifted to doing just that.

And we were able to achieve over a period of years savings in the ballpark of what we're talking about doing over the next ten years. So we know we can do it because we've done it before. We know we can ramp up quickly because we've done it before and we know that. If you look at the relationship of the ratio of the cost to gigawatt hours, of the cost per megawatt lines, you see that ratio does improve with the economies of scale as you do more.

So we think that that's a good gut check on our budget projections as well. Last slide, please. So to conclude, I just want to say to the other utilities in the room and the other utilities involved in this proceeding that you

need to consider all sources of savings. As some of the presenters said, there are things not included in the study that they are looking at.

There are really a lot of things and opportunities to add to the wonderful resource of these potential studies which are very well done and especially when you're thinking ten years out.

And look back in history, learn from what we've done before, learn from what others have done as you're looking about what's possible to do in the future. And then ask yourselves do you want to nail the modest goal that we know we can achieve or do we want to achieve the most we can.

If you set a goal here, you know, moderate goal, you're probably going to get that, but you won't get up here unless you set a goal up there. And that's a very important consideration. And really -- and no one likes to fail to meet a goal, but when you think about the important issues here and you think about what you want to tell your grandchildren when you retire, you know, what did you do, Momma or Grandpa, to address these horrible things we're experiencing now in 2047 or whatever with the climate change. Did you

do everything you could, you had the power to? Do you want to be able to say yes, we did.

So think about that too.

MS. PFANNENSTIEL: Thanks, Bruce. I especially want to thank Director Patterson for being here, for sharing with us the SMUD board's thinking on adopting these really aggressive strategies, these very aggressive goals. We've been following obviously and have been inspired and have really appreciated the SMUD board's leadership and your leadership on this issue. It's really important to us to take some part of the State that is really central in all of our thinking and watch you take on a lot of these activities and provide -- especially as we're going through this process right here statewide, to look at that leadership.

I have a couple of specific questions, Bruce. First of all, let me say that your slide number 6 where you have the potential story and you the included and excluded. That excluded column is perhaps one of my favorite in this whole discussion because I agree with you. I think those are the areas that have been largely excluded from the discussion.

I think they're -- many of them are explicitly excluded in the PUC in the past process and I think that the main reason is that they're

hard to measure. And so how are you going about doing measurement and evaluation of these programs?

MR. CENICEROS: That's something we're going to be figuring out for the next several months. It's not an easy thing to do and this is the reason why they're often excluded from these types of studies.

But there have been many precedents to measuring the impact of behavioral changes and the permanence of those changes and measuring the impacts of public education and training efforts and things like that.

And so we're going to be building on that history and try and do as rigorous of a job as we can, but it is going to be a challenge. The main comment I would have is, you know, but the error bar on there and do the best you can and make sure that's within the range of your -- of what you're trying to achieve.

MS. PFANNENSTIEL: Well, if you succeed at all of those, you will be in the category of

market transformation which is what I think where we need to go with energy efficiency.

On the question of local ordinances,

Title 24 has the requirement that the measures included be technically feasible and cost effective and that's on a statewide basis. I would think that if you looked just at the SMUD service area, the City of Sacramento, you would find measures that are perhaps cost -- feasible and cost effective in Sacramento that may not be on a statewide basis and I'm thinking of PV, for example.

Have you considered developing your own set of Title 24 new building construction measures that might exceed Title 24?

MR. CENICEROS: Well, that's a very good question and a good suggestion for an approach there. We haven't gotten to the stage of recommending a model ordinance yet to our local governments. We're starting with the permitting fees and the streamlining process and all that, but that would be one of the next steps to do is to see what -- which things in particular make the most sense in our climate and in our construction types and put those forth for consideration by the

local governments.

And they may pick some of them. They may adopt the whole list. Some may want -- not

want to do anything, but we're already finding that three of our local governments have been driving applicants to our advantage homes program which requires 20 percent better than Title 24 and 30 percent on the cooling budget for peak savings because it's one way of mitigating the environmental impact in the approval process.

And they say would you like to do this and SMUD offers an incentive, by the way, or would you like to do these other things, and they're choosing the efficiency approach.

And the Air Quality Management District also has requirements that are driving some of these builders to the program. So that mechanism's already happening. The local governments don't have to worry about what's cost effective, but they have relied on us to kind of determine that -- the best things to do. This is the performance level that makes economic sense in Sacramento.

MS. PATTERSON: And I'd like to add that we have a very supportive Building Industry

Association here in Sacramento and I was approached by someone last week from the Building Industry Association. I ran into him at Marble

Slab Ice Cream and he said he was interested in, you know, developing a partnership with SMUD to talk about these -- at least thermostats and some retrofits at the time of resale because they were interested in becoming involved in that.

So, you know, although talks haven't begun, there's -- the door's been opened for that and they have also been incredibly supportive in terms of the new homes that are -- have been proposed.

In several developments, we have Lenar Homes is building 1,200 solar homes that are standard, not options, entire developments in the region that will go on top of SMUD advantage homes. So we have these net zero developments sprouting up, and, you know, Tim Lewis just announced the same thing. I thing Premier Homes has done -- has already built theirs.

So, you know, we have a very good partnership going on with our building community and we think we can achieve some more efficiencies through the new construction.

MS. PFANNENSTIEL: SMUD has done an absolutely excellent job of working with the builders I know on the solar homes and helping

them -- walking them through the process and helping that work and many of the builders have told us that that's part of the success in that area. And so I'm sure you can do that kind of thing on energy efficiency.

So thank you both for being here today.

MR. GEESMAN: Yeah. I want to thank you both for a remarkable presentation. I would encourage you when you're looking at new buildings to take a fresh look at how you define -- or how we define cost effectiveness.

Our approach has been fairly turgid and locked in time to the middle 1970s. We've never developed the ability to take into account extra analogies. We certainly have not attempted to calculate claimant impacts associated with cost-effectively tests.

We've given no attention to portfolio impacts in terms of utility supply portfolios in a fuel intensive region of the country and the impact that price volatility has played on utility customers.

So a fresh look at how these cost-effectiveness determinations are made I think could be quite informative to us and perhaps

instructive as well.

I'd also join Jackie in congratulating you, Sue, in terms of your leadership on the SMUD board. I know you've been on the board for a long time. We have many distinguished alumni at the Energy Commission, but I'd be hardpressed to think of one that's had a bigger impact in terms of the real world.

And as you said, your rates are 20 to 25 percent lower than --

MS. PATTERSON: 25 to 30.

MR. GEESMAN: -- 25 to 30 percent lower than your local competitor. I think that for those utilities whose boards have a narrower franchise than yours and who are only concerned with shareholder impact -- and I know that if you listen to the advertising, they're concerned with customer impact as well, but even focused on the shareholder impact, your customers are your shareholders and I think some of those investor-owned utility boards would be well advised to look pretty carefully at your

efficiency planning process and your resource planning process because it's truly one that should be emulated.

MS. PATTERSON: Thank you. And I'd just like to say that we have a great staff who helps implement our vision. Who said that? Yeah. We -- these guys bring us great challenges, and, you know, we've been able to do some pretty remarkable things so -- and a very forward-thinking board as well. So it's great to be able to charge ahead here.

MR. TUTT: I just think this is fantastic to see the increases in energy efficiency budgets that are presented here. LA looked like it was quintupling their budget and I think both Palo Alto and SMUD talked about doubling. I don't know that I picked up what Alameda was doing in that regard.

But I'm wondering about more generally all the publicly-owned utilities. Is someone able to talk about similar responses or activities there or not?

MR. KLEIN: This is Gary Klein from staff here. We're about to get -- so we are about to get those in aggregate toward the end of this

month. Some of these utilities that are here have gone way ahead of the others in the pack and have data to give us today.

But at our next hearing in August is where I'm going to have to present all of those numbers to you.

MS. PFANNENSTIEL: Any other questions of this panel? It's been really very useful to us. Congratulations to you all and I'm extremely excited -- activities and for sharing -- coming in and sharing. Thank you.

MS. LEWIS: Okay. We could go right into the second panel. And this will be discussion on evaluation of efficiency programs for the publicly-owned utilities, what's on the drawing board.

And with us today is Dave Reynolds from the NCPA who's coordinated a lot of this work for the utilities and Dan Violette who is with Summit Blue Consulting.

MR. REYNOLDS: Good morning, Commissioners and staff. We're up. I've prepared a -- I'm David Reynolds with Northern California Power Agency. I'm Member Services Manager there. And I've prepared a brief presentation on NCPA

member program evaluation activities for you.

Next slide. There you go.

As we know, AB-2021 requires an annual

report on the results of independent evaluation, the measures and verifies, the energy efficiency and demand reductions achieved by POU programs. In anticipation of our needs, NCPA and its members conducted a competitive solicitation for qualified consultants.

From the solicitation, we identified three consultants with the knowledge, expertise, and experience to provide independent evaluation for our members. Members will select from the pool of qualified consultants to obtain evaluation of services they will conduct on their programs. Next slide, please.

This slide illustrates where evaluation fits in the process of implementing AB-2021 requirements. Evaluation activities will follow the current activities that we're very busily involved in and that's market potential, program targets, and program planning efforts.

So what we're representing here is at present we're just at the beginning of starting our evaluation implementation plans. Next slide.

Our evaluation objectives are twofold. One which we believe meets the intent of AB-2021 is to verify the reliability of the reported

energy savings and reductions in demand. And the second objective is to use the evaluation process to improve programs and do this on a continual basis. Next slide.

So evaluation, measurement, and verification as we refer to the independent evaluation. So in support of our objectives, we will be conducting various verification and evaluation activities. Each utility will conduct verification activities including the counting of installed measures and verifying measure variables especially as they relate to the reliability of our reported energy savings. And this can be that the equipment installed met the efficiency requirements, the building and use type and baseline conditions.

What I would -- what I'd like to point out is the last bullet of the -- yeah, the last bullet. In conjunction with SCAPA (ph) and CMUA, we will be hiring a consultant to evaluate and update the deemed savings that we identified previously in the study a year ago and to update

that study and update the E3 reporting tool which we use to report our programs.

While most of the other activities we're

talking about occur on a continual or an annual basis, we see an update to the deemed savings happening on a three-year cycle. Next slide.

Evaluation issues, I would just like to point out to just cost and timing -- speak to those just briefly.

The primary issue with any evaluation are cost limitations and I'd like to point out specifically it's difficult for small utilities to afford meaningful evaluation efforts and still maintain program cost effectiveness. It gets increasingly difficult the smaller the utility gets.

So in working with our pool of consultants, we're going to work on developing strategies that optimize our evaluation efforts. Some of these include, you know, we believe we'll need to use the 80-20 rule to the best extent we can and focus on the measures that produce the greatest amount of savings or have the greatest impact. We think that will be helpful.

And also being creative in data

collection is key and that comes in the form of efficient sampling designs and utilizing utility staff where possible to gather data, minimizing

field measurements, and other efforts to help us to optimize the evaluation effort.

And to the extent possible, we're going to attempt to coordinate activities between utilities and similar programs. We believe that will help quite a bit as well.

To the other issue is the timing of the evaluation report. Evaluation activities lag program activities. So AB-2021 seems to say that we're going to provide one report that will supply everything, the performance and the evaluation at the same time and that may not be logical.

So it might be worth considering that that evaluation report follows at a later time. Just from a practical perspective. And we haven't got to the point where we could say exactly what that time would be or if indeed there is an issue, but it may be well to consider that that's -- that's a follow-up report.

And as noted previously, you know, we envision the deemed savings to happen on a three-year cycle basis.

And with that, that's the -- that's my presentation.

MR. GEESMAN: What role does the State's

10 percent savings target play in your envisioned program measurement and evaluation process?

MR. REYNOLDS: Well, to the extent that the programs will be aggressively pursuing targets, the evaluations going to support or validate that the progress and the reported savings are indeed, you know, on goal. We've asked -- we need as much help -- we try to get as much help as we can. So we're asking our consultants as we engage them to also help us identify ways that we might improve our programs and indeed achieve more savings.

MR. GEESMAN: But are those programs likely to then be calibrated to a 10 percent target consistent with the legislation?

MR. REYNOLDS: Calibrated? No.

MR. GEESMAN: I mean it seems to me oftentimes -- and sometimes it's beneficial. These goals take on a life of their own. Here we've been given a goal by the Legislature. I don't know where it came from. I certainly don't recall having been involved in any discussions of

the advisability of the goal, but it's a goal. It's put into the statute. It provides a benchmark by which we can and will evaluate the

success of the various programs, both among municipal utilities and the investor-owned utilities, and I'm just wondering in your program measurement and evaluation what role that goal is likely to play.

MR. REYNOLDS: Well, the evaluation, we see it primarily to validate the reported savings, to validate the performance. Other than that, it's not -- I don't see it connected to the goals.

MR. GEESMAN: Let me flag that as a potential problem going forward. Also at our earlier hearing, Scott Tomashefsky from NCPA had suggested that we should include savings in the distribution system and transmission system in evaluating progress in efficiency programs and I believe the representative of Alameda made the same comment this morning.

Do you think that that was included in AB-2021's contemplation of a 10 percent goal?

MR. REYNOLDS: I don't think it was included in the utility's requirements for energy efficiency programs. We do think it's part of

what we can do and provide to the State.

MR. GEESMAN: And I think there'd be value in that. I don't want to get into the

counterproductive cycle that for several years the State and the various municipal utility organizations were in over whether large hydro should be considered part of the renewable portfolio standard.

I'd be happy to consider it as part of the renewable portfolio standard. We said so at the time, but that would lift the 20 percent goal on the renewable side. So I think to be analogous here, you want to include those distribution and transmission savings which I do think have value.

I think you have to look above the 10 percent savings target that AB-2021 specifies.

MR. REYNOLDS: Indeed if it can bring us past that 10 percent, then that's great.

MR. GEESMAN: Well, I want to flag that as well as a potential issue of some contentiousness going forward. Thanks for your presentation.

MR. REYNOLDS: Um-hmm.

MR. VIOLETTE: I'm Dan Violette with Summit Blue Consulting. You may or may not be

familiar with our company, so I thought I'd give you just a little bit of background and I appreciate the opportunity to speak at this

proceeding.

At Summit Blue and personally I've been involved with the evaluation of energy efficiency programs for more than 15 years. Our firm has a contract in the State of New York to evaluate the SBC-funded programs. It's a five-year contract. It covers almost 60 different energy efficiency programs.

We've also completed the evaluation of all of the statewide energy efficiency programs in New Jersey, all of the statewide energy efficiency programs in Texas, and we're quite active in California working on a number of the programs in California.

So our firm brings quite a bit of implementation experience in the evaluation arena. Next, please.

I just wanted to start by reviewing some of the key components of implementing a DSM program because that affects the evaluation. I mean the first thing you need to do when you come up with a DSM program is develop a program

concept. You've got to take that program concept and turn that that into value propositions for both customers and the utility.

You need to market the program. Once you market the program, you've got to get the customer to kind of sign on the dotted line and actually decide to participate in the program. You've got to organize delivery channels for the equipment whether it be compact fluorescents or other lighting or motors.

You've got to have fulfillment. You've got to be able to get the equipment installed at the sight. You need quality control and quality control is an issue that I'm going to come back to because I think quality -- and programs has been one of the areas where we've seen kind of a loss in savings potential.

And finally you have to do the financial accounting. You have to do the settlements with the customers and make sure that you track the program costs appropriately.

So in essence designing a new DSM program is similar to the development of a new product or service and it has the same set of challenges, and kind of with this, not all

programs will be successful as they are rolled out and many will need a shake-out period before they become successful. Next.

So why should we evaluate demand side programs or energy efficiency programs, you know. All programs pose challenges on implementation. Evaluation helps ensure that the objectives and expectations for the programs are attained. The evaluation transforms the initial guesses -- initial estimates that were made in program design and the tracking data that's collected as the program is being rolled into information on program performance.

The evaluation also provides for accountability and this is one of the areas that we see an issue as evaluation contractors. Often the people implementing the program, viewer evaluation is a negative. They view it as people coming in to secondguess their work and it can pose some challenges for the completion of the evaluation.

They see it as a way that might diminish what they've accomplished. Instead what we would like to try to do is create a climate in the work that we do and the work that should be ongoing

here in California where the implementers view this as a positive. It's proof of their accomplishment.

You know, if you don't do an evaluation, you don't really have any proof that they've made the contributions that they've claimed to have made.

So taken together, evaluations are tools for improving program performance and providing a proof of accomplishment. Next.

Under cost effective evaluation, people are often asked, you know, how do you make evaluation, you know, as cost effective as possible. I want to start off by talking about the most expensive evaluation.

The most expensive evaluation that is done tend to be those evaluations that have to attempt -- and I use the word attempt because sometimes it's not possible -- to recreate program data that was not gathered at the time it was most cost effective to gather that data.

And the evaluation work that we do to address various technical issues and impact estimation, we often want information on how the customer heard about the program, what their

reasons were for participating in the program. For example, was there -- is their building or site, does it have a particularly high energy

efficiency potential and there's information that we need to get as the program is being rolled out.

And once the evaluation contractor is called in -- and sometimes this is a year and even two years after somebody participates in a program -- we can't go back to that person and ask them why they participated in the program or what measures were there before. We can't get the information we need to do the evaluation.

So we need to collect that data at the time we can collect it and at the time it's cost effective to collect it and that's when the people that are doing the implementation are on site. And so we need to develop a tracking system that has not just implementation in mind, but it also has evaluation in mind. And it must be maintained.

So the steps that I've listed for successful evaluation effort, you know, step one is having a commitment to evaluation right at the outset -- right at, you know, program day one. When that program is rolled out and designed,

there has to be a statement that the program's going to be evaluated.

If the implementers understand that

there's going to be an evaluation effort that comes along with program implementation, I think they'll be more accepting and work with the evaluators in a more positive manner.

And step two is you've got to develop the tracking systems to track the data for implementation and evaluation. Okay. And then you have to do real-time management of the tracking system and in a number of the evaluations we do, and in fact I would say in the majority of the evaluations we do, we often find good tracking systems, but the data hasn't been put into the tracking systems for maybe the past six to nine months.

And so you have a lag where people are so concerned about getting the measures installed in the field and they feel that that's their high priority goal that they don't take the time to go back and fill out the forms required to populate the tracking system. So that when you come to do an evaluation, often your first step in evaluation is to try to go back six to nine months and

repopulate the tracking system.

Again if, you know, this can be done as part of program implementation, it makes the

evaluation effort more consistent and more accurate.

You've got to finalize the evaluation strategy, you know, execute the strategy and effectively communicate the results.

In this proceeding, I was asked to give some thought to methods for publicly-owned utilities, and I think that California in the work that it's done on the energy efficiency evaluation protocols has developed most of the techniques that, you know, will be needed in many of the evaluations.

The size of the program will influence the methods used, but that's covered in the evaluation protocols and one focus that I think should be provided in evaluations is on verification and quality assurance.

When we do evaluations, you know, if the equipment is installed at the site and installed correctly and is working and is there, typically you get the savings. You know, what we find is we find a number of cases where the air conditioning

unit wasn't charged correctly or the energy management system wasn't installed correctly and we find quality errors or we find -- we've even

found instances where you would put in ceiling insulation and they would only have enough insulation to cover three-quarters of the ceiling and they never came back to finish that last quarter. And of course the leakages from that part of the ceiling that was not insulated tend to be much higher than they would -- would otherwise have been the case and you lose a lot of efficiency gains.

And so, you know, a focus on making sure that the program being implemented, you know, meets, you know, the quality standards I think is an important component of evaluation and will be important for a lot of the newer programs that are being rolled out.

Another issue is assessing the value of information that you expect from evaluation. A lot of the publicly-owned utilities are smaller than the investor-owned utilities and so you want to focus on the programs and measures with sizable impacts. I think there's quite a bit of opportunity to leverage work performed by the

other California utilities, either the larger POUs or the investor-owned utilities.

The publicly-owned utilities can combine

resources where appropriate as has been discussed by Dave Reynolds just before this presentation. And I think it should also be recognized that there are economies of scale and evaluation. It costs less on a percentage basis to evaluate a large energy efficiency program than it does small energy efficiency programs.

You know, if you've got 2,000 participants in a program, you need almost the same sample sizes for evaluation as you need for a program that only has, say, 250 to 500 participants. So there are economies of scale and evaluation that will be more expensive for -- to achieve the same level of precision in a smaller program than it will be in a larger program.

The challenges for publicly-owned utilities that I see is that -- you know, and I've worked with a number of utilities in the northwest, in the south, and the midwest is that we found that publicly-owned utilities do vary in their commitment to energy efficiency.

You know, some embrace energy

efficiency, you know, and most all believe that energy efficiency is a good thing, but they have different points of view about whether or not

utility sponsored energy efficiency programs are the right way to go about achieving energy efficiency.

So there can be differences in enthusiasm with which these publicly owned utilities pursue these programs. And then regardless of the commitment to energy efficiency, there's likely to be varying commitments to evaluation.

And one of the things that I would like to emphasize is that a commitment to evaluation is necessary for success. I mean too often in trying to meet the standards and trying to roll these programs out, the emphasis is on getting measures installed, getting participants into the program, and they forget that, you know, six months from now, nine months from now, a year from now, somebody's going to have to come back and conduct an evaluation and data needs to be collected throughout program implementation to make this happen.

So a potential issue for these

publicly-owned utilities, you know, may be a lack of expertise and evaluation and by not having this expertise and evaluation, this might mean that

there may not be a champion for evaluation at these publicly-owned utilities and without that champion, you may not get that push to collect the data that you need to have collected right from the beginning from the program.

And the last comment I have is that in working with publicly-owned utilities across the country, you know, I think that they can have as much success at energy efficiency as can larger IOUs. There's often more of a shared energy efficiency ethic across utility personnel and the community and that evaluation activities should be viewed as the proof of this ethic and the proof of the evaluation concept. Thank you.

MS. PFANNENSTIEL: Thank you. Just -- maybe it's more conceptual than we can deal with right now, but we talked earlier about the kinds of activities or the kinds of programs that don't lend themselves to easy evaluation in some of the things that SMUD was talking about, education, training, high profile awareness campaigns, partnerships with community organizations, local

energy ordinances. All of those could have very significant impacts and they could all be funded by publicly-owned utilities or in fact

investor-owned utilities activities.

How do you start evaluating those?

MR. VIOLETTE: Well, a number of evaluations have been conducted in California on those kinds of programs and they are more difficult to evaluate. You simply need to -- you usually start with looking back at the theory of the program and what was the program designed to accomplish.

And again if -- evaluation is a commitment and it's a commitment that is incorporated into the program design. Then when they design the program, they can design objectives that you can go back and try to measure. For example, if you have an advertising campaign, you can do a survey before the campaign and you can see what the awareness is regarding certain kinds of energy efficiency measures.

Okay. Then an objective can be to increase awareness of those measures. Then you can go back in the evaluation and see if the program has met its objective. And so when we

work with utilities trying to design programs, we often try to build in metrics that will help us see if the program is achieving in the field what

the program design people believe it should be achieving in the field. And so those hard to evaluate programs actually make it more important to go back to the beginning of program design and try to incorporate measurable metrics in the design so that when you do evaluation you can, you know, get useful information out.

MS. PFANNENSTIEL: Thank you. And you didn't see any of those kinds of programs that I just described as being ones that shouldn't be included just because they're difficult to measure I take it.

MR. VIOLETTE: No. I think they should all be measured to one extent or another. It's tougher to get precise estimates out of them, but again if you don't try to measure these programs, I think that you're not kind of living up to the promise of accountability for the people that are implementing the programs.

MS. PFANNENSTIEL: Thank you.

MR. GEESMAN: In order to facilitate better and perhaps more economic evaluation, does

it make sense for trade associations to standardize programs across multiple small utilities? Have you had any experience with that

type of program design?

MS. PATTERSON: Well, there have been some attempts at doing that. National (ph) Electric Cooperative Association in America has done -- has developed programs that -- programs designs that go out to their members, but again what we see with these small utilities is a lot of diversity.

You know, one utility may have a lot of commercial customers. Another utility may have almost no commercial customers and have all agricultural customers. And as the utilities become smaller, you tend to see deviations in kind of customer composition and other elements of the utility play a greater role.

So it's almost easier to standardize programs across large investor-owned utilities because you know they all have a lot of commercial customers. They all have a lot of residential customers and they probably have enough customers to populate a program in an effective way.

When you go to these publicly-owned

utilities that are smaller, that may not be the case. So it's probably tougher to standardize programs among the publicly-owned utilities.

MR. GEESMAN: Thank you.

MS. PFANNENSTIEL: Gary, were you participating in this panel?

MR. KLEIN: I'm waiting for the question and answer period that's coming up next, but I'm supposed to ask them a bunch of questions.

MS. PFANNENSTIEL: Okay. Go ahead.

MR. KLEIN: Thank you. I had a question about the sequencing of evaluation and program planning. You have a nice little graph says you're about to do the evaluation planning, design, and all that stuff. When do you expect the programs to begin that are going to be evaluated in that time frame?

MR. REYNOLDS: Well, a lot of programs will be starting fiscal year we'll -- is about --

MR. KLEIN: Okay. I don't know. It should be green.

MR. REYNOLDS: Yeah, it's green. A lot of program fiscal years will be starting in July. That program year will be evaluated. Last years programs, I don't think you'll see evaluation

on -- well, not green enough apparently.

The programs that are starting in this next fiscal year will be the programs that will be

evaluated.

MR. KLEIN: So part of my question goes to Dan then. When would you bring the evaluators in to help with the program design? I mean I think we're having a problem I know with the IOU programs that were out of phase. That's one of the complaints we hear at the dias all the time is we're not getting the data in a time that's useful for us to do anything with.

I'd like to avoid that here if we could.

MR. VIOLETTE: And this has been kind of one of the constant tensions between evaluation and implementation because the implementers simply want to get the programs implemented and the measures installed in the most cost-effective way.

They don't want to take time out to record the data that was -- or the data on the equipment that was taken out, and yet the equipment that was taken out is important because that gives us the differential between the new equipment and the old equipment. And once they throw that old equipment away, we can never go

back and reconstruct that data. You know, we've lost that information forever.

And then we have to go back with -- to

assumptions or to, you know, second best solutions. And I think that if the individuals involved with program implementation realize as part of their job -- essentially part of their commitment to implementation to facilitate accurate evaluation of their program that that's actually written into their job description right from day one and if they're committed to allowing good evaluation to be done on their program, we can do evaluation at half the cost of many of the evaluations I've been involved with.

And I would encourage that to happen and encourage evaluators to review some of the data collection instruments and some of the implementation protocols to help ensure that when the program is done or when measures have been installed, we can go back and do that proof of concept and make sure that we've gotten the savings that we think we've gotten.

MR. GEESMAN: But, Gary, I think that's something that the staff ought to make a recommendation to us on before we publish our

final report because, you know, not to make light of the problem. The statute puts us on a three-year cycle. This can't be hard to

accomplish if we properly structure the evaluation phase of the program.

Now, it does appear to have been beyond the talent capacity in the investor-owned utility program, at least for this first cycle. They too are on a three-year cycle, but haven't been able to time the evaluation phase effectively to influence planning of the next cycle.

But I think we certainly ought to learn from that precedent and avoid that problem.

MR. KLEIN: I would agree. We will make such a recommendation.

I have a couple of other questions if that's all right. I want to talk about risky programs for a moment from an evaluation hat. You have limited dollars. David, I know that -- you know, you don't want to spend all your money on evaluation; right? You want to actually do something.

And, Dan, you've looked at programs all over the map that are supposed to go for large potential, but -- and some of the small potential

ones may actually be riskier. How do you assess where to spend your dollars on the evaluation. If both David and Dan could address that, that would

be helpful.

MR. REYNOLDS: Well, part of the measuring the risk is trying to -- is in the program design. You've got to decide where -- how much risk we can take because we've got to produce energy savings. So we can't go on and make all of our programs risky. We've got to produce savings, but we need to achieve -- we're looking at developing programs. As we develop these targets, we know we're going to have to -- and that's going to be -- that's change and it's going to be difficult. And so we're going to have to learn the new programs and new ways to go out and reach out to those customers.

So I think most of the risk is going to be assessed there. And the evaluation needs to informed as to what the program design is and look at specifically what you're measuring the risk -- the appropriate overall program design.

MR. VIOLETTE: I mean I think, you know, those comments are perfectly appropriate. One of the things that we do when we have a contract just

as long term as the contract we have in New York which is a five-year term contract to evaluate their SBC funded programs is that we try to

identify researchable hypotheses, meaning that if we do an evaluation and we learn something, we know then that we're going to change something about the program and that changing something about the program could be -- it could be a dramatic change, a dramatic redesign in the program.

And so in looking at risky programs, we look at the programs and we try to assess the odds that we're going to learn something that might result in a dramatic change in the program. And if we think that that's a high probability or a high enough probability, we may put more resources in to looking at that program than another program.

Again, another kind of allocation of evaluation funding is those programs that are not living up to their potential. For example, we see a lot of programs where the projected participation rates are say 2,000 participants in year one, and yet they've only gotten 150. I've seen that kind of dramatic disparity between a

participation in programs.

And often going back to those programs that are clearly not achieving their objectives

and trying to look at the barriers to those programs or redesign is another area that was used to allocate evaluation funding.

MR. KLEIN: The -- how are the public utilities now measuring and tracking what's going on? I mean you guys have been doing programs for a while; right? I know SMUD has and Anaheim; right? Alameda, yeah, sorry.

Everyone's been doing it. How have you been doing it? Maybe we could ask our folks to come back and answer that a little bit too if they would. David, you can answer as well.

MR. REYNOLDS: Well, each of these utilities have done it differently. I could speak to one utility because I'm familiar with their tracking of energy savings and they -- they've set up a database and they -- they track in energy savings and track -- in fact track all the measures that they need to track for their program and then roll those -- the savings over to what we call the SB-1037 report which we report back to the Commission. But they do have databases set

up.

MS. OWENS: Let me elaborate on that. For Alameda Power & Telecom, we've always had

databases on our programs. I have databases going back to 1991 on our efficiency programs and for the commercial sector, all rebates -- all items that are rebate receive -- must have a preinstallation inspection and we get copies of paid invoices and then we do a post-installation.

We actually go out and field verify all measures. So we know that. So that would be for all the commercial, whether it's compressed air, VFDs, lighting.

And then in the residential sector for weatherization, again it's pre- and post-installation inspections. For CFLs -- yeah, we use your base case or we've now been using the data from the -- generated from the KEMA study for SB-1037, but we -- use a base case averages and actually it was the same as the investor-owned utilities at the time and then we use the Energy Star database which is -- all the data in there that you need.

And we track -- we know the refrigerator, the manufacturer, the model, the

date it was installed, and so forth, so the database just says here's your base case and here's your Energy Star. So there's your savings.

MR. KLEIN: Have you -- do you actually track like in the refrigerator case the model that got pulled out? Do we know that or you just sort of use --

MS. OWENS: Oh, no, we have model number, manufacturer, cubic feet, yes. Oh, no, of the pulled out, no.

MR. KLEIN: Okay. So you're using a --

MS. OWENS: We put -- the savings for that program, that could be a contentious issue, is -- the way we look at it is you're buying a new refrigerator. We're taking a conservative approach because it's time to get a new refrigerator not because, oh, my goodness, I don't have an Energy Star refrigerator.

But we feel that we're making the -- getting them to make the choice to get a new Energy Star instead of just a base case.

MR. KLEIN: So your savings might actually be a little bit larger than you're estimating, but you're being conservative in the estimate.

MS. OWENS: That's correct.

MR. KLEIN: That's helpful. I don't have any other questions at this point.

MS. PFANNENSTIEL: None up here. Thank this panel very much. Useful information. Now, are there members of public who would like to make comments on the subject?

MR. WANLESS: Good morning. I'm Eric Wanless and I represent NRDC and I'm happy to be here again today. And I have a couple comments and I guess we have till 12:45 so I -- I'm not going to speak for that long to spare -- but I'll try and keep my comments to under three minutes so you can shoot me steely gazes if I'm talking too much.

I've certainly been impressed by a lot of the presentations we had today specifically with some of the POUs presenting their plans and it's very heartening and there's a lot of exciting stuff happening.

In addressing some of the questions that went out in the pre-workshop kind of documents, I'll start by talking a little bit about the achievable potential targets and this also ties into some of the work that I've been doing at the

CPUC with the big, bold strategies.

I think it's critical that in setting targets, that we set reached targets and that's

why I've been impressed by a lot of the presentations today, is we need to be setting reached targets.

It's my personal view that achievable potential targets are probably squirrelliest numbers that you can have out there. You have technical potential and you have economic potential and those are reasonably, you know, I guess more firm numbers.

If you look at the achievable potential and you ask any, you know, forecaster or scenario guy, they'll tell you, you know, don't use that related to believe what's out there. You have error bars that are probably, you know, plus 30 to 50 percent on the top side and 10 percent on the bottom side around those targets.

So I think in terms of setting targets -- and it's important to set targets that get at the heart of what we're trying to do. Along that vein, I think it's critical that the achievable potential targets adopted by the Commission truly reflect what represent the

maximum cost-effective, reliable, feasible savings, and what that means to me is that the potential should reflect things like customer

adoption -- or excuse me -- the targets -- the achievable potential should reflect things like customer adoption rates, other market barriers, and that sort of thing and they shouldn't be tied to funding constraints.

We don't want to be using our status quo to be moving forward. So -- and I think that if we do set achievable targets based on what's happening now in utilities, we're going to undermine the purpose of AB-2021.

So NRDC urges the Commission to explore some of the assumptions that are going in to setting the achievable targets for the utilities and again as I said before, I'm excited by what I've heard this morning.

Several of the questions we addressed in our comments for the previous workshops, so I'm not going to address those now, but again just to highlight again some of the concerns with making sure that if we're counting -- we need to make sure that we're counting things towards achievable potential that reflect what went into that

potential and those targets.

So if we have targets that are based on demand side energy efficiency, then only demand

side energy efficiency investments should count for that. If -- you know, I'm not advocating that one's more important than the other. Supply versus demand, they're both very important, but I think that if we're only basing targets on demand side stuff that we need to make sure that we're only counting demand side efforts towards that.

In terms of the environmental factors applying the utility efficiency decision-making, all utilities should include environmental factors in the avoided costs that they use to calculate cost effectiveness of energy efficiency opportunities. This already happens with the IOUs to some extent and I think it's safe to say that all utilities in the State now know that greenhouse gases will be regulated under AB-32.

MR. GEESMAN: Tell me how it happens with the IOUs.

MR. WANLESS: The IOUs I'm referring to the carbon adder and that --

MR. GEESMAN: The $8?

MR. WANLESS: The 8 -- or $9 now. But

that adder was set into place in anticipation of future regulation, I think it's played out that, yes, carbon's going to be regulated.

MR. GEESMAN: It's a rather small fraction of what either the European Union or the IPCC report suggest would be a more appropriate number.

MR. WANLESS: Yes. I would agree that that's a smaller number. The distinction there is that number is only intended to reflect I think the cost of regulation on the utility and not the actual environmental costs because the PUC at the time --

MR. GEESMAN: So when the EU estimates a likely market cost of carbon of $30, the financial regulation cost would only turn out to be 9?

MR. WANLESS: I don't know. I --

MR. GEESMAN: Maybe the way we historically regulate, it would. That may be a --

MR. WANLESS: Yeah.

MR. GEESMAN: -- prudent assumption, but I'm not certain it's an appropriate one.

MR. WANLESS: I don't know either and I'm certainly not going to advocate that we continue using a $9 a ton value in the IOU

process.

MR. GEESMAN: And are those carbon costs the only environmental costs that ought to be

factored in?

MR. WANLESS: No. I think that criteria pollutants and those costs that are kind of pretty readily acknowledged as being environmental costs should also be included in there.

MR. GEESMAN: Water impacts, biological impacts, public health impacts?

MR. WANLESS: I think you have to look at the -- I guess to use the 80-20 percent rule -- trend and look at putting in costs that you can get your hands around, and I think right now carbon costs are something that are coming around to be something that's a little bit more tangible in terms of being able to say okay, this is a cost there. I'm not saying that there aren't costs associated with, you know, the water use and that sort of thing, but I think that you have to work with what you have in terms of being able to get cost in there.

MR. GEESMAN: Well, I certainly think in terms of commissions, you have to work with what you have, but should you err on the high side or

on the low side?

MR. WANLESS: Well -- so I would suggest that we err on the high side because the effects

of climate change and environmental costs are certainly -- they're sure to be an effect. I think the uncertainty is how big of effect are we talking about and I think it's -- especially with energy efficiency, it's -- I think it's tough to argue that you do bad things by investing in more energy efficiency versus less.

So let's see. In terms of the -- how the savings targets impact rate changes and that sort of thing, I was happy to hear that Palo Alto is looking at bill impacts. I think that's very important and that customers -- most customers care about bills. They don't really care about rates per se.

I'm going to switch gears a little bit and talk briefly about the energy efficiency and resource planning and including energy efficiency and procurement as a procurement resource.

The -- in the IOU world, the CPUC currently requires the investor-owned utilities to integrate energy efficiency into resource planning process and that happens through taking energy

efficiency out of their demand forecasts so thereby reducing their need to procure traditional fossil resources.

In addition to that, the IOU cost recovery mechanisms for energy efficiency programs include both their public goods charged funding and also their procurement funding, and we believe that generally this framework is an appropriate way to integrate energy efficiency into resource procurement.

I was happy to see again with Palo Alto their integrated supply curve, something I worked on a little bit while I was at RMI. That's -- it's heartening to see that, you know, energy efficiency is in the integrated resource plan or in their long-term procurement plans.

In terms of determining whether or not that's happening in this process -- and this is again related -- excuse me -- somewhat related to the 10 percent goal set in the bill -- the law. I think the goal is to procure all cost-effective energy efficiency. I think the 10 percent target was a suggestion. I think that the goal is procure all cost effective energy efficiency.

MR. GEESMAN: So it's your suspicion

that that goal is probably larger than 10 percent?

MR. WANLESS: I think that their --

especially in the context of AB-32 and the

heightening awareness of the importance of energy efficiency in our world today that there's a lot more possible out there than you see through, you know, the existing potential studies that are all looking in your rearview mirror to drive sort of forecasts for potential.

In terms of things that are -- sorts of questions that are useful in evaluating whether or not energy efficiency is being fully integrated as a procurement resource in utility planning processes, I have several different things that might be helpful to ask. I'll just provide a few examples and we'll be submitting written comments as well with kind of full detail of that.

Things to ask are how is energy efficiency being accounted for in the long-term procurement plan, our integrated resource plans. What portion of public benefits funds is being vested in energy efficiency versus low income assistance versus renewable energy and -- related to that is AB-1890 passed in 1996 mandated a spending from public benefit programs, but it

didn't place a ceiling on utility investment in these programs.

And I think a potential problem that we

need to be looking out for and be aware of is we don't want increased spending in energy efficiency at the expense of other programs and I think we can do more than the AB-1890 kind of requirements for spending and public goods charges. That shouldn't be -- that's what we're going to spend, then we'll kind of take stuff from here and --

MR. GEESMAN: Well, let me ask you -- you know, and I acknowledge that it's difficult in some instances to quantify extra analogies and I don't regard the $9 carbon adder to be a particularly good quantification of either the financial risk of carbon or potential greenhouse gas impacts.

But why should we waste any of our public goods charge money on something like efficiency which would lend itself so readily to a procurement cost effectiveness calculation?

MR. WANLESS: I think that demand side energy efficiency as compared to supply side energy efficiency, the demand side investments face much more significant barriers that public

goods charged funding and other mechanisms that we have in place in California are in place to address.

And so I think it's a lot easier to say that energy efficiency on the supply side is easily tied into procurement funding. I think it does tie in on the demand side as well, but I think there are also significant barriers to fully incorporating energy efficiency as a procurement resource in terms of what the utility is using for planning.

MR. GEESMAN: Well, the programs though that we've talked about today and that you've described to us in the past, all are -- and I think quite legitimately -- customer focused programs and I think it's reasonable particularly for the municipal utilities to be particularly wired into that customer focus.

That's the nature of their organization, but the charge to the Energy Commission and arguably to Public Utilities Commission as well I think are a little bit broader than that.

Take, for example, the area of codes and standards and what we do or don't do at the time that property changes hands or our difficult time

penetrating the rental housing sector. It would see that some of these market sectors would require a mandate approach that really tends to

take you away from the customer focused nature of our current programs.

I presume your organization would be supportive of those mandatory requirements, wouldn't you?

MR. WANLESS: I will have to check in with the folks that work more in codes and standards before I say anything on that. I think that there is a balance to be played in terms of mandates in the energy efficiency world and also making sure that the framework for energy efficiency makes sense on the utility side so that we have both mandates for energy efficiency, but we also have policies in place that make it fully the right thing to do both financially and for customers and across the board in everyone's best interest to invest in energy efficiency.

I think that comes both through changing maybe a structure so that energy efficiency truly functions as a procurement resource for utilities combined with a, you know, broader mandate through State efforts perhaps.

MR. GEESMAN: Why does it make any sense for utilities to be hooking up new customers if their residences aren't optimized for energy

efficiency?

MR. WANLESS: I'm -- I think that while there is -- in the investor-owned utility side, there is certainly decoupling in the State. I think that that's a broader that in terms of fully getting decoupling throughout all the power in the State and also, you know, it's something that NRDC's working on across the country. There's still more to be done.

MR. GEESMAN: Well, focused on the investor-owned utilities, why does it make any sense for PG&E to hook me up as a new customer if my dwelling has not been optimized for energy efficiency?

MR. WANLESS: I might have to think about this one and get back to you. Off the top of my head, I would say that I think that -- well, I think it will be safe to me -- I'll get back to you in the formal comments on that.

MR. GEESMAN: Okay. Thank you.

MR. WANLESS: I have a few brief comments on EMNV (ph) stuff and then I promise

I'll sit down. In terms of the question presented in the workshop materials and what constitutes an independent evaluation -- we had some EMNV experts

talk today, I think that the Commission should be able to work with the CPUC to develop a consistent framework for EMNV in the State and the CPUC has guidelines for what qualify as independent consultants and in addition to that CalMAC maintains a list of firms that provided EMNV services in California.

I think to the extent possible, the Commission should provide guidance to the publicly-owned utilities on what constitutes an independent evaluation. Very briefly it -- from our point of view, it's things like people that are independent from the persons and -- or person running the programs and also someone who's qualified to perform the rigorous evaluation and that's in large part from -- maybe -- the CalMAC list and whatnot.

And I think I'll close with those comments. Thank you for the opportunity to talk.

MS. PFANNENSTIEL: Thank you, Eric. Other public comment?

MR. KLEIN: I actually had a follow-up

and if there's no one else, then I'll wait if there are.

MS. PFANNENSTIEL: There -- I think

there are.

MR. KLEIN: Good.

MR. BURT: Is this the time for the people that filled out the cards or you're seeking comments only on evaluation?

MS. PFANNENSTIEL: Go ahead. Even without a blue card, you're welcome, Mr. Burt.

MR. BURT: I'm Bob Burt, Insulation Contractor Association. Our principal look at potential unfilled energy efficiency here in California potential for our industry is in those tremendous number of empty or near empty walls and the problem with putting retrofit into those is very simple, that unless that householder was planning quite shortly to do a house paint job, then you have to include the cost of a paint job in the estimate because those ugly holes have to be covered.

So that means that we have a serious look constantly at voided costs and at present the avoided costs just don't cover doing that kind of work. But we do look at the future and every

indication we have is that avoided costs are all headed up.

Just today I noticed a number of almost

remarkably easy estimates on a cost of gas. All we have to do is stand back and look. Canada is sending us about half of the gas they're producing from a bunch declining fields and their domestic demand is increasing for both conventional and for the fact that they're using gas to develop their raw sands.

We know for certain based on the way they acted during the first big energy crisis that Canada will damn sure ensure that all their domestic demand is met before there is one cubic foot exported. So we can assume that that source is going down.

When we look at liquefied natural gas, there are heroic capital and time lags combined with an almost passionate MMBY based on these pictures of giant explosions. So anybody who looks at natural gas costs has to say they're going up and the same thing is true of oil as we watch increased demand from the India and China combined with a few other places that are developing with the fact that nobody has found any

new giant fields, we know that oil is going to go up.

And finally even if the pessimists are

wrong about global warming and even if we had a good explanation for the current warning based on long-term known solar cycles, it still is a matter of the -- using the hippocratic to first do no harm that we will certainly do some approach to dealing with reducing greenhouse gases.

And that effort is going to cost money and it's going -- the money is going to be based on at least some thought as to what would cost to eliminate greenhouse gases. Well, what's the low-hanging fruit to eliminate greenhouses gases? Among other things, it's energy efficiency.

So it seems to me that there is a reasonable prospect of the coming generation for very much higher avoided costs which would authorize all kinds of additional energy efficiency. I was simply -- my attention to the subject is concentrated by the one potential I mentioned, but it's -- if you stand back and look at the whole field of energy efficiency, as soon as you see a bigger avoided cost, you see a whole lot more potential.

So my purpose here is simply to encourage the thought that when we're looking at potentials, let's not just assume very nice, easy

avoided costs. Let's look at the real world and assume those sons of bitches are going up.

MS. PFANNENSTIEL: Thank you, Bob. Any further public comment? Anyone on the phone? Nobody on the phone. Okay. Anything further?

MS. LEWIS: No, there isn't. I just want to mention that our next workshop will be on August 9th and we'll be putting out an estimate -- a draft estimate of the statewide potential right before that. But that's the workshop that we'll discuss the combined numbers. Thank you.

MS. PFANNENSTIEL: Okay. Thank you all very much for your participation. We'll be adjourned.

(Whereupon, at 11:55 a.m., the IEPR Workshop was adjourned.)

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CERTIFICATE OF REPORTER

I, PETER PETTY, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission IEPR Workshop; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said workshop, nor in any way interested in outcome of said workshop.

IN WITNESS WHEREOF, I have hereunto set my hand this 26th day of June, 2007.